

YALE
MEDICAL LIBRARY



GENERAL MEDICAL
LIBRARY

THE GIFT OF
DR. GEORGE BLUMMER

PROCEEDINGS
OF THE
CONNECTICUT
STATE MEDICAL SOCIETY

1915

123d ANNUAL CONVENTION

HELD AT

HARTFORD, MAY 19th and 20th

EDITOR

MARVIN McR. SCARBROUGH

PUBLISHED BY THE SOCIETY

The Connecticut State Medical Society does not hold itself responsible for the opinions contained in any article unless such opinions are indorsed by special vote. All communications intended for the Connecticut State Medical Society should be addressed to M. McR. Scarbrough, M.D., 105 College Street, New Haven, Conn.

The next annual meeting of the Connecticut State Medical Society will be held in Bridgeport, May 17th and 18th, 1916.

TABLE OF CONTENTS.

	PAGE
OFFICERS OF THE SOCIETY, 1915-16,	I
COMMITTEES OF THE SOCIETY, 1915-16,	2
MEMBERS OF THE HOUSE OF DELEGATES, 1915,	5
COMMITTEES OF THE SOCIETY, 1914-15,	6
MINUTES OF THE HOUSE OF DELEGATES,	8
Report of the Secretary,	8
Report of the Chairman of the Council,	12
Reports of the Councilors:	
(a) Hartford County,	16
(b) New Haven County,	17
(c) New London County,	20
(d) Fairfield County,	21
(e) Windham County,	24
(f) Litchfield County,	25
(g) Middlesex County,	27
(h) Tolland County,	28
Report of the Treasurer,	29
Report of Committee on Public Policy and Legislation,	32
Report of the Committee on Medical Examination and Medi- cal Education,	41
Report of Committee on Scientific Work,	52
Report of Committee on Honorary Members and Degrees,	54
Report of Committee on Arrangements,	55
Report of Committee on Sanatorium for the Nervous Poor,	56
Report of Committee on State Farm for Inebriates,	57
Report of Committee on Medical Inspection of Schools,	57
Report of Committee on National Legislation,	69
Election of Officers,	71
Report of Delegate to American Medical Association,	73
Miscellaneous Business,	77
Appointment of Committee on Medical Defense,	79
Appointment of Committee on Hospitals,	80
OLIVER COTTON SMITH MEMORIAL DINNER,	81
MEMORIAL ADDRESS. BY DR. EDWARD T. BRADSTREET,	83
PRESIDENT'S ADDRESS,	91

Scientific Programme.**Papers on Special Subjects.**

Separation of the Epiphysis of the Upper End of the Femur. George W. Hawley, M.D., Bridgeport,	105
DISCUSSION,	112
Some Precancerous Affections. John E. Lane, M.D., New Haven,	116
DISCUSSION,	127
Colony Treatment of Epileptics in Connecticut. Donald L. Ross, M.D., Mansfield Depot,	134
DISCUSSION,	140
The Anatomical Method in Diagnosis of Cancer of the Breast. Henry C. Russ, M.D., Hartford,	147
DISCUSSION,	158
The Faucial Tonsils and their Proper Treatment. E. Terry Smith, Hartford,	162
DISCUSSION,	176

Medical Papers.

The Proper Management of Labor by the Physician. David D. Reidy, M.D., Winsted,	183
DISCUSSION,	191
The Work of the State Tuberculosis Commission, its Development and Present Outlook. David R. Lyman, M.D., Wallingford,	195
DISCUSSION,	204
Foci of Infection in Chronic Arthritis. Paul P. Swett, M.D., Hartford,	207
DISCUSSION,	214
Carbohydrate Indigestion. Wilder Tileston, M.D., New Haven,	221
DISCUSSION,	228

Surgical Papers.

Prolapse of the Uterus in Elderly Women. Daniel Sullivan, M.D., New London,	231
DISCUSSION,	233
Bone Graft in Pott's Disease. James L. Moriarty, M.D., Waterbury,	242
DISCUSSION,	247
Malposition of the Cæcum Complicated by Appendicitis, with Report of Three Cases. Alfred M. Rowley, M.D., Hartford,	251
DISCUSSION,	257
Values in Surgery. E. W. Smith, M.D., Meriden,	260
PAPERS READ AT COUNTY MEETINGS,	267

Obituaries.

George Cornelius Bailey of Hartford, by Daniel F. Sullivan of Hartford,	275
John Dermott Hayes of Torrington, by Timothy M. Ryan of Torrington,	278
Miner Comstock Hazen of Haddam, by Frank K. Hallock of Cromwell,	281
Curtiss Clark Hoyt of Bridgeport, by George W. Osborn of Bridgeport,	284
Frederick Eugene Johnson of Mansfield Depot, by Eli P. Flint of Rockville,	287
Henry Russell Lowe of Putnam, by Edward F. Perry of Putnam	290
Henry Noble Smith of Middletown, by Arthur B. Coleburn of Middletown,	292
William Sheldon Clark Perkins of Norwich, by Anthony Peck of Norwich,	295
Henry Martin Rising of South Glastonbury, by W. S. Kingsbury of Glastonbury,	297
Albert Joseph Roberts of Bridgeport, by J. R. Topping of Bridgeport,	298
Jay Webber Seaver of New Haven, by Charles J. Bartlett of New Haven,	300
William J. Sheehan of New Haven, by William F. Verdi of New Haven,	303
Andrew Jackson Smith of Bridgeport, by Samuel M. Garlick of Bridgeport,	305
Oliver Cotton Smith of Hartford, by Walter R. Steiner of Hartford,	308
Nathaniel Eugene Wordin of Bridgeport, by Henry S. Miles of Bridgeport,	312

Members of the Society.

Honorary Members,	317
Active Members—County Lists,	318
List of Former Officers,	340
Alphabetical List,	343

OFFICERS OF THE SOCIETY.

1915-1916

President.

MAX MAILHOUSE, M.D., New Haven.

Vice-Presidents.

CHARLES B. GRAVES, M.D., New London.

CUSHMAN A. SEARS, M.D., Portland.

Secretary.

MARVIN McR. SCARBROUGH, M.D., New Haven.

Treasurer.

JOSEPH H. TOWNSEND, M.D., New Haven.

COMMITTEES.

1915-1916

STANDING COMMITTEES.

COMMITTEE ON SCIENTIFIC WORK.

Frank W. Stevens. Wilder Tileston.
The Secretary.

COMMITTEE ON MEDICAL EXAMINATIONS AND MEDICAL EDUCATION.

Samuel M. Garlick. J. Francis Calef.
John B. McCook. Fritz C. Hyde.
Charles A. Tuttle.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

E. J. McKnight, *Chairman*. George M. Burroughs.
C. J. Foote. Ralph S. Goodwin.
Rush W. Kimball. Frank K. Hallock.
W. H. Donaldson. Eli P. Flint.
The President. The Secretary.

COMMITTEE ON HONORARY MEMBERS AND DEGREES.

William H. Carmalt. S. B. Overlock.
D. Chester Brown.

SPECIAL COMMITTEES.

COMMITTEE ON A SANATORIUM FOR THE NERVOUS POOR.

Rienzi Robinson. John L. Buel.
Frank K. Hallock. George Blumer.
Frederick T. Simpson.

COMMITTEE ON A STATE FARM FOR INEBRIATES.

Frank H. Barnes. Charles J. Bartlett.
Robert L. Rowley. Daniel C. Patterson.
Arthur B. Coleburn.

PROCEEDINGS.

COMMITTEE ON THE MEDICAL INSPECTION OF SCHOOLS.

Edward W. Goodenough.	Thomas G. Sloan.
Charles P. Botsford.	Joseph H. Townsend.
William B. Cogswell.	

COMMITTEE ON NATIONAL LEGISLATION.

Everett J. McKnight.

COMMITTEE ON PUBLIC HEALTH EDUCATION.

J. H. Townsend, <i>Chairman</i> .	Marguerite Bullard.
Maude W. Taylor.	E. R. Kelsey.
Harold S. Arnold.	Kate C. Mead.
Stuart J. Lawson.	Thomas F. Rockwell.
Florence A. Sherman.	George H. Warner.

COMMITTEE ON MEDICAL DEFENSE.

William R. Miller, *Chairman*.

Everett J. McKnight.	Frank H. Wheeler.
----------------------	-------------------

COMMITTEE ON REGISTRATION.

Joseph H. Townsend.	Eli B. Ives.
William H. Carmalt.	Laura H. Hills.
Albert R. Keith.	C. H. Turkington.
W. E. Hartshorn.	J. H. Kingman.
L. F. LaPierre.	Eli P. Flint.

DELEGATES.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

Everett J. McKnight.	D. Chester Brown.
----------------------	-------------------

DELEGATES TO STATE ASSOCIATIONS.

MAINE.

W. W. Hawkes, New Haven.	P. H. Ingalls, Hartford.
--------------------------	--------------------------

NEW HAMPSHIRE.

S. M. Garlick, Bridgeport.	C. C. Gildersleeve, Norwich.
----------------------------	------------------------------

VERMONT.

C. J. Bartlett, New Haven.	Fred B. Willard, Hartford.
----------------------------	----------------------------

MASSACHUSETTS.

G. M. Burroughs, Danielson.	Kate C. Mead, Middletown.
-----------------------------	---------------------------

RHODE ISLAND.

P. J. Cassidy, Norwich.

John G. Stanton, New London.

NEW YORK.

Charles D. Alton, Hartford.

E. W. Goodenough, Waterbury.

NEW JERSEY.

R. S. Goodwin, Thomaston.

C. P. Lindsley, New Haven.

PENNSYLVANIA.

W. E. Fisher, Middletown.

W. H. Carmalt, New Haven.

HOUSE OF DELEGATES.

COUNCILORS.

HARTFORD COUNTY.

WALTER R. STEINER (reëlected).

NEW HAVEN COUNTY.

WILLIAM H. CARMALT.

NEW LONDON COUNTY.

PATRICK J. CASSIDY (reëlected).

FAIRFIELD COUNTY.

SAMUEL M. GARLICK.

WINDHAM COUNTY.

SELDOM B. OVERLOCK (reëlected).

LITCHFIELD COUNTY.

ELIAS PRATT.

MIDDLESEX COUNTY.

GEORGE N. LAWSON (reëlected).

TOLLAND COUNTY.

THOMAS F. ROCKWELL.

DELEGATES.

HARTFORD COUNTY.

John H. Rose.

William R. Miller.

Noah A. Burr.

Orin A. Moser.

Paul P. Swett.

William H. Crowley.

Everett J. McKnight.

PROCEEDINGS.

NEW HAVEN COUNTY.

Arthur N. Alling.	Wilder Tileston.
Joseph A. Cooke.	James H. Flynn.
Nelson A. Pomeroy.	Frederick G. Graves.
Joseph H. Townsend.	Walter S. Lay.

NEW LONDON COUNTY.

Charles B. Graves.	George H. Jennings.
--------------------	---------------------

FAIRFIELD COUNTY.

Martin V. B. Dunham.	Frank H. Coops.
Frank W. Stevens.	George H. Noxon.
John M. Johnson.	Jacob R. Topping.

WINDHAM COUNTY.

Robert C. Paine.	Theodore R. Parker.
------------------	---------------------

LITCHFIELD COUNTY.

Irving L. Hamant.	Robert Hazen.
-------------------	---------------

MIDDLESEX COUNTY.

Cushman A. Sears.	John E. Loveland.
-------------------	-------------------

TOLLAND COUNTY.

Frederick W. Walsh.

STANDING COMMITTEES.

1914-1915

COMMITTEE ON SCIENTIFIC WORK.

Walter R. Steiner.	George Blumer.
	The Secretary.

COMMITTEE ON MEDICAL EXAMINATIONS AND MEDICAL EDUCATION.

Charles A. Tuttle.	John B. McCook.
Samuel M. Garlick.	J. Francis Calef.
	Fritz C. Hyde.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

E. J. McKnight, <i>Chairman</i> .	George M. Burroughs.
C. J. Foote.	Ralph S. Goodwin.
Rush W. Kimball.	C. E. Stanley.
W. B. Cogswell.	Eli P. Flint.
The President.	The Secretary.

PROCEEDINGS.

COMMITTEE ON HONORARY MEMBERS AND DEGREES.

D. Chester Brown.

Frank K. Hallock.

S. B. Overlock.

COMMITTEE ON ARRANGEMENTS.

E. Terry Smith.

George N. Bell.

Albert R. Keith.

SPECIAL COMMITTEES.

1914-1915

COMMITTEE ON A SANATORIUM FOR THE NERVOUS POOR.

Rienzi Robinson.

John L. Buel.

Henry S. Noble.

George Blumer.

Frederick T. Simpson.

COMMITTEE ON A STATE FARM FOR INEBRIATES.

Frank H. Barnes.

Charles J. Bartlett.

Robert L. Rowley.

Daniel C. Patterson.

Arthur B. Coleburn.

COMMITTEE ON THE MEDICAL INSPECTION OF SCHOOLS.

Edward W. Goodenough.

Thomas G. Sloan.

Charles P. Botsford.

Joseph H. Townsend.

William B. Cogswell.

COMMITTEE ON NATIONAL LEGISLATION.

Everett J. McKnight.

COMMITTEE ON PUBLICATION OF MEDICAL JOURNAL.

Walter R. Steiner.

Frederick B. Willard.

M. McR. Scarbrough.

COMMITTEE ON PUBLIC HEALTH EDUCATION.

Chairman, Joseph H. Townsend.

Maude W. Taylor.

Marguerite Bullard.

Harold S. Arnold.

E. R. Kelsey.

Stuart J. Lawson.

Kate C. Mead.

Florence A. Sherman.

Thomas F. Rockwell.

MINUTES OF THE HOUSE OF DELEGATES.

The first meeting of the House of Delegates was called to order on Wednesday, May 19, 1915, at 11 A. M., at the Hunt Memorial Building, 38 Prospect Street, Hartford, by the President, Dr. Stephen J. Maher of New Haven. The following were present: Dr. Walter R. Steiner, Dr. Wm. H. Carmalt, Dr. Patrick J. Cassidy, Dr. Samuel M. Garlick, Dr. Elias Pratt, Dr. George N. Lawson, Dr. Thos. F. Rockwell (councilors), and Dr. John H. Rose, Dr. Noah A. Burr, Dr. Paul P. Swett, Dr. Wm. R. Miller, Dr. Oran A. Moser, Dr. Wm. H. Crowley, Dr. Everett J. McKnight, Dr. Joseph A. Cooke, Dr. Nelson A. Pomeroy, Dr. Joseph H. Townsend, Dr. Wilder Tileston, Dr. Frederick G. Graves, Dr. Walter S. Lay, Dr. Chas. B. Graves, Dr. George H. Jennings, Dr. Martin V. B. Dunham, Dr. Frank W. Stevens, Dr. Frank H. Coops, Dr. George H. Noxon, Dr. Jacob R. Topping, Dr. Robt. C. Paine, Dr. Robt. Hazen, Dr. Cushman A. Sears, Dr. John E. Loveland, Dr. Frederick W. Walsh (delegates), the President, Dr. Stephen J. Maher, and the Secretary, Dr. Marvin McR. Scarbrough. The following reports were then read, accepted and ordered placed on file:

(1) Report of the President, Dr. Stephen J. Maher (New Haven):

(Dr. Maher explained that as he had been President only a few days, he did not have a report to make.)

(2) Report of the Secretary, Dr. Marvin McR. Scarbrough (New Haven):

REPORT OF THE SECRETARY.

Mr. President and Gentlemen of the House of Delegates:

An approximate measure of the value of a society to a profession is the percentage of individuals of that profession who are members of the society. A few comparisons may be of interest. January 1, 1914, there were 1,630 physicians in the State,

of whom 885, or 53.6 per cent were members of the State Medical Society and eligible to membership in the American Medical Association. Our immediate neighbor, Massachusetts, had 60.8 per cent of the profession, members of the State Society; New York, 41.5 per cent; Maine, 52 per cent; Vermont, 43.2 per cent; and New Hampshire, 67.5 per cent. With the present liberal attitude toward all reputable physicians, it is hoped that the percentage can be greatly increased in this State.

The seventh semi-annual meeting of this Society was held in conjunction with the 123d semi-annual meeting of the New London County Medical Association at the State Hospital for the Insane, Norwich, October 1, 1914. The programme consisted of inspection of the hospital buildings in the morning and a scientific session after dinner. Considering the inaccessibility to the greater part of the physicians of the State, the meeting was well attended.

If the order is continued, Fairfield County will be the next place for the semi-annual meeting.

On June 12, 1914, the Litchfield County Association celebrated its 150th anniversary, or sesquicentennial. The historical address, by Dr. J. C. Kendall, which was published in the 1914 Proceedings, showed painstaking research and well deserved such preservation. Other addresses, worthy of mention, were made by Dr. William H. Welch of Baltimore, Dr. F. S. Dennis of New York, and Dr. W. Gilman Thompson of New York. (The programme is given under "Papers read at County Meetings" in this volume.)

The following deaths have been reported by the County Secretaries during the past year :

Brackett, William Walker, New Britain, April 10, 1914.

Curtiss, William Martin Stanley, Bristol, May 17, 1914.

Hazen, Miner Comstock, Haddam, December 25, 1914.

Higgins, Royal Lacey, Norwalk, April 15, 1914.

Hoyt, Curtis Clark, Bridgeport, March 5, 1915.

Johnson, Frederick Eugene, Mansfield Depot, March 28, 1915.

Lewis, John Benjamin, Hartford, April 26, 1914.

Lowe, Henry Russell, Putnam, October, 1914.

Noble, Henry Smith, Middletown, March 16, 1915.

Ramsay, Otto Gustav, New Haven, June 12, 1914.
Sheehan, William Joseph, New Haven, January 13, 1915.
Smith, Andrew Jackson, Bridgeport, 1915.
Smith, Oliver Cotton, Hartford, March 27, 1915.
Treadway, William Buckingham, Howard, R. I., 1915.

The past year has been one of high mortality of the profession. It is indeed sad to note that so many of the deceased were prominent and invaluable members of the Society. Their loss has been severely felt.

Among those holding office was Dr. Miner C. Hazen, a Vice-President in 1907. Dr. Oliver C. Smith, our late President, was many years Chairman of the Council. His enthusiasm, sterling honesty and spirit of unselfish devotion made him of incalculable service to the profession. His high ideals in professional life are of permanent and immeasurable influence.

I should not pass on without announcing the very recent deaths of four prominent members of the Society:

Bailey, George Cornelius, Hartford, May 10, 1915.
Seaver, Jay Webber, New Haven, May, 1915.
Wordin, Nathaniel Eugene, Bridgeport, May 10, 1915.
Roberts, Albert Joseph, Bridgeport, May 11, 1915.

Dr. Wordin was Secretary from 1889 to 1905. In the latter year he was made President, to succeed Dr. E. H. Welch, resigned.

The following physicians, forty-seven in number, have been admitted to membership during the past year:

Daniel Cantarow, Tufts, 1911, Hartford, Conn.
Anna E. Coyle, Women's Medical College, 1912, Windsor Locks, Conn.
Clinton D. Deming, Johns Hopkins, 1910, Hartford, Conn.
Charles A. Gillin, Univ. of N. Y., 1883, New Britain, Conn.
William F. Meagher, Univ. of Vermont, 1899, Hartford, Conn.
Joseph E. Strobel, Temple, 1909, Hartford, Conn.
John H. T. Sweet, Tufts, 1912, Hartford, Conn.
Robert L. Waite, Johns Hopkins, 1909, Hartford, Conn.
Earl B. Carter, Johns Hopkins, 1911; Ph.B., Yale, 1907, Hartford, Conn.
Calvin H. Elliott, Medico Chirurgical, 1905; M.Sc., Buckland, 1904, Hartford, Conn.
Matthew H. Griswold, Univ. of Vermont, 1913, Kensington, Conn.

- William Levy, Yale, 1911, West Suffield, Conn.
 Caroline R. Conkey, Women's Medical College of New York, 1881, Waterbury, Conn.
 Philip Frank, Yale, 1907, B.Sc., Waterbury, Conn.
 Grover C. Sweet, P. & S., Balt., 1912, New Haven, Conn.
 Chester N. Woodford, Univ. of St. Louis, 1908, Naugatuck, Conn.
 Raymond H. Ryder, P. & S., Balt., 1913, Waterbury, Conn.
 Joseph V. Esposito, Jeff. Medical College, 1912, New Haven, Conn.
 Harry A. Conte, Long Island Coll. Hospital, 1912, New Haven, Conn.
 Ernest H. Johnston, Univ. of Maryland, 1900, Waterbury, Conn.
 Edmund Spicer, Yale, 1905, Waterbury, Conn.
 Milton L. Dryfus, Yale, 1912, New Haven, Conn.
 Robert F. Scholl, Yale, 1912, New Haven, Conn.
 Arthur R. Weed, Univ. of Vermont Medical School, 1912, New Haven, Conn.
 Herman R. White, Yale, 1912, New Haven, Conn.
 Maxwell Lear, Yale, 1911, New Haven, Conn.
 Jacques H. Green, N. Y. Univ. & Bellevue Medical College, 1913, Waterbury, Conn.
 William T. Bull, P. & S., New York, 1902, New Haven, Conn.
 Hugh B. Campbell, Univ. of Pa., 1909, Norwich, Conn.
 Thurman Park Maine, Medico Chirurgical, 1912, Norwich, Conn.
 John Daniel Donahue, Balt. Medical, 1909, Norwich, Conn.
 John James Donahue, Balt. Medical, 1909, Norwich, Conn.
 John Francis Flynn, P. & S., Balt., 1912, Bridgeport, Conn.
 Daniel Joseph McCarthy, P. & S., Balt., 1906, Bridgeport, Conn.
 John Joseph MacDonald, Yale, 1907, Bridgeport, Conn.
 Rollin Alanson Curtis, Univ. City of N. Y., 1893, Stratford, Conn.
 Albert Elmer Austin, Jeff., 1905; A. B. & A. M., Amherst, Sound Beach, Conn.
 Emanuel S. Brodsky, Univ. Zurich, Switzerland, 1908, Westport, Conn.
 Joseph Horace Beaudry, McGill, 1913, Bridgeport, Conn.
 John Hamill Finnegan, Maryland Medical College, 1912, Bridgeport, Conn.
 Henry Kirk White Kellogg, P. & S., New York, 1903; B. S. Amherst, 1899, Norwalk, Conn.
 John Francis Hackett, McGill, 1906, B.A., Yale, Mansfield Depot, Conn.
 John Ladd Burnham, Yale, 1899; A.B., Yale, 1896, Portland, Conn.
 Joseph Daniel Hartnett, Baltimore, 1911, Winsted, Conn.
 Evans Dounton Russell, Jefferson, 1911, Roxbury, Conn.
 Homer Tomlinson Partree, Yale, 1892, Torrington, Conn.
 Frank M. Smith, Univ. Vt., 1911, Willimantic, Conn.

Again, I can report that the membership of the Society is the largest in its history, viz., 946 members, a gain of 28. There

are 931 active members in good standing. New Haven County again leads with 16 new members; Hartford follows with 12; Fairfield, 9; New London, 4; Litchfield, 3; Windham, Middlesex, and Tolland, with one each.

During the past year the Society has lost 38 members, as follows: 15 by death, 7 by removal, 3 by resignation, and 13 by suspension.

The following table shows the changes in membership:

Membership	County Associations	New Members	Reinstatements	By Transfer	Deceased	Removed	Resigned	Suspended	Gain	Loss
230	Hartford County	12	0	0	4	0	1	0	7	0
280	New Haven County	16	5	0	2	5	1	11	2	0
65	New London County	4	0	0	0	1	1	0	2	0
191	Fairfield County	9	1	0	5	1	0	0	4	0
36	Windham County	1	0	0	1	0	0	0	0	0
66	Litchfield County	3	8	0	0	0	0	1	10	0
44	Middlesex County	1	0	0	2	0	0	1	0	2
19	Tolland County	1	0	0	1	0	0	0	0	0
931		47	14	0	15	7	3	13	25	2
15	Honorary.									
946	Total.									

Respectfully submitted,

MARVIN McR. SCARBROUGH,
Secretary.

(3) Report of the Chairman of the Council, Dr. William H. Carmalt (New Haven):

REPORT OF THE CHAIRMAN OF THE COUNCIL.

Mr. President and Members of the House of Delegates:

GENTLEMEN: Owing to the unavoidably late appearance of the proceedings for last year, certain matters which came up in the

early meetings of the Council in the current year have already been given you, so that it is unnecessary to refer to them again.

The matter of a better registration of physicians throughout the State was brought up and, on motion by Dr. Steiner, it was voted to request the House of Delegates to appoint a committee at this meeting to take the matter into consideration.

At the last meeting, held on May 10th, the death of the President, Dr. Oliver C. Smith, being announced, the Council, according to the By-Laws, unanimously elected the Vice-President, Dr. Stephen J. Maher of New Haven, to take his place. So far as the records show, this is the first time a President has died in office, though Dr. E. H. Welch resigned after election, owing to ill-health and died shortly afterwards.

The Secretary of the State Society stated that he had received a notification from the Court of Probate of Hartford that Dr. Smith had made a bequest of \$1,000 to this Society. The Secretary was instructed to learn the conditions of the bequest.

I have this communication received by him from the executor of Dr. Smith's estate:

DR. M. McRAE SCARBROUGH, *Secretary*.
76 Wall Street,
New Haven, Conn.

DEAR SIR:—Your letter of May 14th concerning the bequest of Dr. Oliver C. Smith to the Connecticut State Medical Society is received.

Section 1, paragraph H, of Dr. Smith's will reads as follows: "\$1,000 to the Connecticut State Medical Society to be held and invested as a separate fund, and the income thereof to be used at the discretion of the Secretary and the Board of Censors to pay the dues of any deserving members of the Society who may be unable to pay said dues themselves."

I hope to be able to pay the sum indicated to you soon after the estate is ready for distribution, which will probably be in October. With the bequest I will send you a copy of the will for your records. I trust that the foregoing gives you all the information that you desire at this time.

Yours very truly,

PAUL M. BUTTERWORTH,
Executor, Estate of Oliver C. Smith.

It is perhaps as fitting now as at any other time to say that the Council voted to accept, as the Financial Committee of the

Society, the donation and to instruct the Treasurer to receive the money.

Dr. Smith's death leaves a gap in our membership it will be practically impossible to fill, for, while men die and institutions live, Dr. Smith has for many years held a place in both our scientific deliberations and our social intercourse second to no one. It is quite fitting that the Committee of Arrangements should devote one evening of this meeting to an appreciation of his memory, and while it would, considering this action, be out of place now to make any extended remarks on this subject, as a colleague for several years on the Council board, I simply reflect the feelings of all in regretting his loss from our deliberations, missing his wise counsel and ever courteous greeting.

At this meeting, Dr. P. J. Cassidy, the Councilor from New London County, stated that at the semi-annual meeting in Norwich last fall Dr. Smith had brought up a proposition presented to him by Dr. J. E. Goldthwait of Boston relating to a change in the ownership of the *Boston Medical and Surgical Journal*, stating that Dr. Goldthwait was desirous to secure the coöperation of the New England State Medical Societies in possibly making it their organ of publication. It had been Dr. Smith's intention to bring it to the notice of the Council with a view of having it referred to the House of Delegates to appoint a committee to consider the matter. It is quite possible that some form of state support and coöperation may be devised that would be useful.

The Council considered the matter brought up in regard to the change of ownership of the *Boston Medical and Surgical Journal* and recommended that the House of Delegates refer the matter of the future relations of the State Society with the *Journal* to the Committee on Publication, the committee to report at the semi-annual meeting of the State Society, at which time a meeting of the House of Delegates will be called to consider the report.

The Council, as the Nominating Committee, submits the following nominations:

President.

MAX MAILHOUSE, New Haven.

Vice-Presidents.

CHARLES B. GRAVES, New London.

CUSHMAN A. SEARS, Portland.

Secretary.

M. McR. SCARBROUGH, New Haven.

Treasurer.

JOSEPH H. TOWNSEND, New Haven.

Committee on Scientific Work.

Wilder Tileston, New Haven. Frank W. Stevens, Bridgeport.

Committee on Medical Examinations and Medical Education.

Charles A. Tuttle (to succeed himself).

Committee on Public Policy and Legislation.

E. J. McKnight.

George M. Burroughs.

C. J. Foote.

Ralph S. Goodwin.

R. W. Kimball.

F. K. Hallock.

W. H. Donaldson.

Eli P. Flint.

Committee on Honorary Members and Degrees.

William H. Carmalt, New Haven.

D. Chester Brown, Danbury. Seldom B. Overlock, Pomfret.

Delegate to the American Medical Association.

Everett J. McKnight, Hartford.

Delegates to State Associations.

Maine—Dr. W. W. Hawkes, Dr. P. H. Ingalls.

New Hampshire—Dr. Samuel M. Garlick, Dr. C. C. Gildersleeve.

Vermont—Dr. Charles J. Bartlett, Dr. F. B. Willard.

Massachusetts—Dr. G. M. Burroughs, Dr. Kate C. Mead.
Rhode Island—Dr. Patrick J. Cassidy, Dr. John G. Stanton.
New York—Dr. Charles D. Alton, Dr. E. W. Goodenough.
New Jersey—Dr. Ralph S. Goodwin, Dr. C. Purdy Lindsley.
Pennsylvania—Dr. William E. Fisher, Dr. Wm. H. Carmalt.

Respectfully submitted,

W. H. CARMALT,

Chairman of the Council.

In accordance with the recommendations of the Chairman of the Council, it was voted, That the President appoint a committee to devise some better means of registration of physicians. The President appointed to this committee the Secretaries of the several County Societies, the Chairman of the Council, and the Treasurer of the Society.

It was voted, That the matter of coöperating in the financial and business management of the *Boston Medical and Surgical Journal* be referred to the Committee on Publication, and that the Committee be instructed to report at a meeting of the House of Delegates to be held in the fall at the time of the next semi-annual meeting of the Society.

(4) Reports of the Councilors from the different County Societies of the State.

REPORT OF THE COUNCILORS.

(a) Hartford County, by Dr. Walter R. Steiner:

Mr. President and Gentlemen of the House of Delegates:

The death of our President, Dr. Oliver C. Smith, who was my predecessor as Councilor, is deeply felt in Hartford County. His enthusiasm and interest in this County Association was always shown and he did much to keep it up to high standards. A sketch of his life will be given elsewhere, but we desire to record here our deep sense of loss at his death.

The County Association is in a healthy state. Our membership is now two hundred and thirty, or a gain of three members over

the number recorded last year. Two have been expelled for the non-payment of dues, while two more have resigned. We have elected thirteen new members during the year. We have lost two by death, Dr. Oliver C. Smith and Dr. George C. Bailey. Dr. Bailey was a public spirited man, whose loss is deeply felt.

The local Society in Hartford has helped to advance the condition of the science and art of medicine, in the County, by offering to the physicians the facilities of a library which is constantly being better equipped. Many physicians, with their noses to the grindstone, can find no time for foreign study or work in the medical centers in this country. These can avail themselves and have availed themselves of post graduate work in this library.

Following the suggestion of Dr. E. J. McKnight, when President of the Hartford Medical Society, clinics have been given at the Hartford and St. Francis Hospitals. His idea was to devote the first Wednesday in the month to a surgical clinic at the Hartford Hospital, the second Wednesday to a medical clinic at the same institution, the third Wednesday to a surgical clinic at St. Francis Hospital and the fourth Wednesday to a medical clinic, at the last named hospital. Seven of these clinics have been held, all with a satisfactory attendance. Their success invites the continuance of this plan, although the monthly number of clinics will probably have to be reduced.

Respectfully submitted,

WALTER R. STEINER,

Councilor from Hartford County.

May 15, 1915.

(b) New Haven County, by Dr. William H. Carmalt:

Mr. President and Members of the House of Delegates:

The membership of the New Haven County Association is reported by the Clerk as 281. In the Councilor's report of last year it was stated to be then 285, with nine applications for membership unacted upon. (I may say in parenthesis that the State Secretary put it at 275.) Fifteen new members were admitted, which, when added to the 285 reported, would have

brought the membership up to the 300 then mildly predicted. Unfortunately, however, the Clerk further reports having dropped eight automatically for non-payment of dues, one as transferred to another State, one as transferred to another county in this State, one as having resigned, one put upon the honorary list, and three having died, also just fifteen, so that the account should have balanced instead of having a loss of four. Perhaps some statistician of the House of Delegates will venture an opinion as to where the missing four have gone to. The Councilor begs not to be considered either ribald or irreverent, but he is unavoidably reminded of the three recognized classes of so-called liars: First, the plain every-day falsifier; second, the liar with a blankety-blank prefix, and, third, the statistician. The Clerk's financial report gives as having:

Left over from last year	\$ 160.50	
Received in dues up to March 30, 1915	1,003.00	
		<hr/>
		\$1,163.50
He turned over to the Treasurer of the State Society ...	\$616.00	
Disbursed	163.48	779.48
		<hr/>
Leaving a balance on hand of		\$384.02

The county meetings were both well attended. The energies of the present Clerk and Executive Committee have resulted in a clinical as well as a literary and administrative session, and these clinical meetings are quite interesting.

The three members we have lost by death, Drs. O. G. Ramsay, W. J. Sheehan and J. W. Seaver, were all prominent in the professional life of the Association and community. They were of our best. An obituary notice of Dr. Ramsay, by his most intimate friend, Dr. Steiner, was read at our October meeting, and appears in the proceedings of the State Society for last year. The last major operation Dr. Ramsay performed was at the State meeting in New Haven, a Cæsarian section. I can add nothing worthy to the eulogy by his friend, but my duty as chronicler of the Association compels me to state briefly our sense of the loss we have sustained. No one in the Society was held in higher regard

professionally, and no one more loved for attributes of head and heart. Of the finest standards of professional and moral work, he was at once an inspiration to his students, and an example to every one with whom he was associated, older or younger.

Dr. Sheehan was just starting in a brilliant career of usefulness as a surgeon; of most loveable disposition and attractive social qualities, he had prospects of a future of great promise. An obituary notice by his friend and colleague, Dr. Verdi, will appear in the coming volume of the proceedings of our State Society.

Dr. Seaver had had a career of usefulness in physical culture, both in the Yale Gymnasium and as a director in the Chautauqua Association. His writings on anthropometry and physical culture are standards.

Probably the most noticeable incident of the year in the professional life of New Haven County and of the State of Connecticut centers in the Yale Medical School, as you know, a child of the State Medical Society. As announced by President Hadley at the Centennial celebration held in June, 1914, there was a gift of "\$400,000 . . . conditioned only upon the establishment of a department of Public Health in the Medical School with the hope that the School may be a greater factor in improving public health conditions in Connecticut." In furtherance of this aim, the Corporation of the University has created the Anna M. R. Lauder Professorship of Public Health and appointed C.-E. A. Winslow, a graduate in sanitary science of the Massachusetts Institute of Technology, to the chair. Prof. Winslow is at present chief of the division of publicity and education in the New York State Department of Health, and Assistant Professor of Biology in the College of the City of New York. I can but congratulate the profession and the State with the prospect which the establishment of this chair and this appointment holds out for improvement in the public health in this State. It has been abundantly demonstrated that "Public Health is purchaseable"—that "within natural limitations any community can determine its own death rate." The most prominent feature

of the present-day science of medicine is preventive. With the opportunity which this appointment offers, let this Society see to its duty that the State of Connecticut does not fall behind those immediately surrounding us, Massachusetts, New York, New Jersey, Pennsylvania and Maryland, in not only guarding against the encroachments of disease from the outside but in "improving public health conditions" within its borders.

Respectfully submitted,

W. H. CARMALT,
Councilor.

(c) New London County, by Dr. Patrick J. Cassidy:

Mr. President and Gentlemen of the House of Delegates:

Monotonous, although pleasing, are the successive years of harmony in the ranks of the members of the New London County Medical Society. No furious rapids disturb the smooth course of our life-stream; an occasional ripple being the greatest commotion. Perhaps our scarcely perceptible gain in membership, viz., two, may be due to this smoothness, by causing too great a feeling of satisfaction. Be that as it may, New London County members have had the honor of entertaining the members of the parent body at the semi-annual meeting, held at the Norwich Insane Hospital last October. At this meeting and at the annual meeting, case-presentations rather took the place, on the programmes, of formal papers. Both of these meetings were well attended and interesting. The semi-annual meeting will remain in our memories because of the presence on that day of our most esteemed colleague, O. C. Smith, of whom no words of eulogy can be sufficient. The death of Dr. Smith is the cause of a feeling of personal loss to the members of the New London County Medical Society.

Respectfully submitted,

PATRICK J. CASSIDY,
Councilor of New London County.

(d) Fairfield County, by Dr. Samuel M. Garlick:

Mr. President and Gentlemen of the House of Delegates:

Medical affairs of the present day partake in no small degree of the "spirit of the times." We live in a rapid age; the blood of youth circulates within us, and the spirit of movement and of change is upon us. Whether we will or will not, "the world do move." Repeatedly and continuously is the Councilor from Fairfield County stirred with wonder and surprise by the evidences of changed view-point and the "spirit of adventure" manifest in the medical profession to-day. Locally this *vis-vita* may be less manifest in volume; its intensity, however, is no less marked in the part than it is in the whole. Our Fairfield County confreres are now, as in years lately past, alert, vigilant, enthusiastic. As intimated in my report of last year, we are not aspiring to be pioneers, leaders, or teachers. We are, however, with expanding opportunities and generously provided facilities, ambitious for the most efficient, and emulous of the highest and best. This County has laid foundation for and is now constructing the best medical work it has ever known; we hope to rank second to none in the State. In this progressive spirit and movement all alike take a part; urban consultant and rural practitioner each cordially contributing his best. I speak thus and with assurance because of personal observation and after confidential conference with men active in the work.

I have referred to the contribution of the rural practitioner to the good work going on in Fairfield County. It is often asserted that competent young medical men will not now, in these progressive days, locate in rural communities and in country practice. My observation does not agree with this implication. Under the beneficent action of our excellent Medical Practice Act, the country towns of Connecticut, in any event those of Fairfield County, are now being served by a class of physicians of better type, greater calibre, with more advanced ideas than ever before. I say this not to discredit, but with a full appreciation of the good and the brave men who have served these communities in generations past. The physicians in the rural

communities of Fairfield County are keenly alert, thoughtfully judicious. If not themselves equipped in personnel or material for the best service to their patients, they know where to find the best and are not slow to employ it.

It is now about twenty-one years since measures for the examination and the specific personal licensure to the practice of medicine was adopted in the State of Connecticut. Thanks to our Committee on Public Policy and Legislation, of which Dr. E. J. McKnight is now and for many consecutive years has been the efficient Chairman, our law, in spite of some possible defects, has been, admittedly, one of the best in the United States. I speak of this because I believe that the advanced state of medical efficiency and the manifest improvement in the rural practitioner are in large measure due to the beneficent effect of this same Medical Practice Act. Only by this fact and by other such evident improvements can the operation of the medical law be fully justified.

Do not, however, misinterpret me. Change is not all of it improvement. Associated with change, and sometimes consequent upon it, are liable to be certain defects. Examples: the diminishing responsibility of the attending physician; absence or diminution of mutual consultation in unique or difficult cases; the know-it-all-air of the newly-fledged specialist, together with the loud and, to the family, impressive announcement "that is the way we treat these cases at my Clinic in New York," with a suave and gracious tolerance of the attending physician. I would also mention the diminished confidence in therapeutic measures and the consequent prompt elimination of really or supposedly offending organs. Straws, it may be, which show which way the current runs; or, are these defects only a transient sparkle in the cup when the wine of life is young?

During the last year, as usual, our profession in Fairfield County has lived at peace with itself and with the world. Quoting from a predecessor, Dr. Gould A. Shelton, I can say, "If disputes have arisen, they have been too slight to test the diplomacy of the Councilor, and all differences must have been adjusted on the nearest field of medical honor." As a fact, I also believe,

nothing has occurred during the past year to mar the pleasant professional and social relations of our members.

Death has dealt hardly with us during the past year. Since my last report we have lost seven members by death: R. L. Higgins of Norwalk, Charles Smith of Riverside, Frederick B. Downs, Andrew Jackson Smith, Curtis C. Hoyt, Albert J. Roberts, and Nathaniel E. Wordin, all of Bridgeport. Of these Dr. A. J. Smith had seen the longest and Dr. Higgins the third longest active membership in the Association. Each of these, in his sphere, had served his profession and the community. In sadness is the conviction forced upon us, the places that have known them will know them no more forever. Their obituaries will appear in their proper place. The last of the seven to pass away was Dr. N. E. Wordin, a former President of this Society and for sixteen years its efficient Secretary. He loved this Society, and to its service he gave joyfully and loyally the best that was his to give. Our State has been sadly stricken this year in the loss of Oliver C. Smith—gracious, loveable and refined—a princely man; Nathaniel E. Wordin—kindly, devoted, sincere—a Puritan of the Puritans in his love of truth and his loyalty to ideals. Bridgeport and Fairfield County extend to Hartford the hand of sincere and cordial sympathy—our busy, bumptious, bustling mart despoiled of its strength; the fair capital city of the State bereft of its finest and best. Indeed, there is

“One touch of nature makes the whole world kin.”

That touch is sympathetic sorrow.

To these losses I must yet add one “lost by departure,” for causes but little known, to parts entirely unknown.

We have taken in eight new members, reinstated one, and accepted one by transfer from New York. Thus we have a total gain of three. Our membership is now 188.

I am happy to state that of these 188 members there are only twenty-two now in financial arrears. This enables us to report the smallest unpaid balance which we have had for several years past, there being only about sixty dollars now overdue. The

Treasurer, Dr. Herbert B. Lambert, says that if it be acceptable he would be pleased to confer with the treasurers of the various county associations, to consider some uniform system of keeping the financial records and a mutually concurrent date for closing their annual reports.

Two regular meetings of the County Association have been held during the year. Both were well attended, instructive papers were read, constructive acts were passed and social good fellowship was manifest throughout. At the annual spring meeting a committee was promptly dispatched to Hartford, with general instructions to appear before the Judiciary or other Committee of the General Assembly and oppose any act or part of acts derogatory to the profession or which appeared likely to lower the standard of the same. Fairfield County is ever ready to "lend a hand" for the benefit of our calling, or to "put a shoulder to the wheel" of progress. It will always insist upon the maintenance of the co-equal standing of our own with that of the other learned professions in this State.

At the spring meeting the Association also voted to request the Councilors and the House of Delegates to consider the propriety of making Bridgeport a triennial meeting place for the Society. This is in accordance with the repeated suggestion of our Councilors, and we trust when this proposition is presented to you it will merit your favorable consideration.

Respectfully submitted,

SAMUEL M. GARLICK, M.D.,

Councilor.

Bridgeport, 19th May, 1915.

(e) Windham County, by Dr. Seldom B. Overlock:

Mr. President and Gentlemen of the House of Delegates:

The regular routine of work in Windham County has gone on without incident or departure from the ordinary.

It becomes almost a platitude to state that an annual and a semi-annual meeting have been held. The Councilor is sorry to

be obliged to state that the attendance at each was below the average for past years. If anyone can devise a plan by which every member of the smaller county associations can be induced to attend every meeting he will have done more for the progress of medicine in the smaller places than one can imagine.

The plan of bringing in clinical material at the meetings has for some years been in vogue and is doing good. It should be impressed on members that it is not necessary to bring in unique cases, but those of general interest in diagnosis, prognosis and treatment. How many times during discussions has some diffident member expressed an opinion in a whisper to his neighbor that has been of more moment than some long paragraph in the general discussion? It is not always the men who are the most fluent in expression that are the most accurate observers.

It is with regret that I report the death of one of our members during the past year, Dr. Henry Russell Lowe of Putnam.

Respectfully submitted,

S. B. OVERLOCK,

Councilor.

The report of Dr. Overlock was read by the Secretary. Dr. Overlock was prevented from being present by illness. It was voted that a message be sent to Dr. Overlock, through the Secretary, expressing sympathy for his illness and regretting his absence and hoping for his speedy recovery.

(f) Litchfield County, by Dr. Elias Pratt:

Mr. President and Gentlemen of the House of Delegates:

The notable event of the year in our County Society was the Sesquicentennial Celebration held at the Country Club, Norfolk, June 12th, 1914. About seventy-five members and guests were present. To meet in Norfolk on a beautiful day in June would have been a treat in itself, but when the purpose of the meeting was to celebrate the founding of probably the oldest medical society in the country it was more than a treat—it was an epoch. It was eminently fitting that this celebration should be held in

Norfolk, for this town is typical of Litchfield County, and the physicians of this locality have been strong men and have left their impress upon our medical world.

The programme of the day was exceedingly interesting and instructive. In the absence of Dr. Oliver C. Smith, President of the State Society, Dr. Walter R. Steiner extended the greetings of the State Society. Dr. E. J. McKnight spoke for the Hartford and Tolland County Societies, Dr. Walter L. Barber for New Haven County Society, Dr. Frank K. Hallock for Middlesex County Society. Of the papers read three deserve special notice. Dr. Frederick S. Dennis of Norfolk and New York read a paper on Retrospective Surgery. An editor of one of our papers writes as follows: "Dr. Dennis' paper was one of the most delightful we have ever had the pleasure of listening to. He 'has the pen of a ready writer' and his diction is exceptionally clear and good. His English is so pure, his sentences so rounded, that one is wrapped in admiration during the reading. Dr. Dennis handled his subject in a manner so free from technical terms that the whole paper was fully appreciated by the layman as well as the physician."

Dr. John C. Kendall gave an Historical Address which can be found in the Proceedings of 1914. This is the most valuable historical writing our local society possesses and is worthy of preservation in the archives of the State Society. Dr. William H. Welch, a son of Norfolk, gave an address on Retrospective Medicine. Those who have heard Dr. Welch speak can understand something of our feelings when listening to him. Speaking without notes, his words came bubbling up from a seemingly inexhaustible supply; with that hush among his hearers which denotes intense interest, he held us spellbound as he related the part medicine has had in the world's work and progress.

Our celebration closed with a reception at Dr. Dennis' bungalow on the top of one of the highest peaks in Norfolk, at which Prof. Wm. H. Taft of Yale University was a guest of honor.

We have held our usual semi-annual and annual meetings, the latter at the Litchfield County Hospital in Winsted. The hospital staff presented case histories with practical demonstra-

tions which were full of interest. Harmony prevails among the members of our Society and the year has been a successful one.

Respectfully submitted,

ELIAS PRATT.

(g) Middlesex County, by Dr. George N. Lawson:

Mr. President and Members of the House of Delegates:

Shaded by ancient elms and looking out on the winding Connecticut, stands a quiet inn, and there in East Haddam, on a beautiful October day, we held our semi-annual county meeting. The main features of this gathering were a symposium on recent medical and surgical progress, given by four physicians of the County and by Dr. F. H. Barnes of Stamford; an inspiring address on professional ideals as exemplified in the lives of some former physicians of Middlesex County, presented to us by that man who has since that October day added for us the finishing touches to another such grand picture of lofty ideals, our late President, Dr. Oliver C. Smith; and very interesting clinical reports by four local physicians. Much of the detail of what was said has passed from mind, but the memory of the good-fellowship around an excellent dinner still lingers.

Our annual meeting in April was held in Middletown and brought before us, among other things, the subjects of arterial tension, erysipelas, and the relation of the ductless glands and intestinal toxins to epilepsy.

The Central Medical Society has held through the season monthly evening meetings in Middletown, at which such subjects as the following have been presented by the local physicians and by experts from other cities: Orthopædics; current topics; X-ray work; advances in medicine and surgery; laboratory methods; institutional treatment of infants; prevention of insanity; manifestations of syphilis; intestinal stasis. In attending these meetings one cannot but be impressed with the contrast between the somewhat empirical methods of twenty years ago and the more exact scientific spirit of to-day. It is

gratifying to see that this scientific spirit is inspiring the physicians of even the rural communities.

Death has removed two of our most loved and honored associates. Dr. Miner C. Hazen was characterized by his friendly and helpful attitude toward his brother physicians; Dr. Henry S. Noble by his quiet, unselfish consideration for all those with whom he came in contact. Both these men have in many ways left us worthy examples of those virtues which we have come to set as the ideals if not the necessary characteristics of the true physician.

Respectfully submitted,

GEO. N. LAWSON.

(h) Tolland County, by Dr. Thomas F. Rockwell:

Mr. President and Gentlemen of the House of Delegates:

I have the honor to report that the Tolland County Medical Association has had a prosperous year and the professional relations of the members have been pleasant and cordial.

The Secretary reports that all dues have been paid.

The Association has gained one new member, John F. Hackett, M.D., Assistant Physician at the Connecticut Colony for Epileptics. He was admitted at our last annual meeting.

We lost one member by death. Dr. Frederick E. Johnson of Mansfield died March 28th, 1915, of pulmonary tuberculosis. He had been in failing health for about two years. He graduated from the medical department of the University of New York in the class of 1879 and for the past thirty-six years had been in general practice in the town of Mansfield and the surrounding country.

He was a man of sterling character and had a host of friends in Tolland County.

The semi-annual meeting was held at Stafford Springs, Tuesday, October 20th, 1914. A very interesting paper on "The Influence of Diet on Disease" was read by Dr. Wilder Tileston, Assistant Professor of Medicine in the Medical Department of Yale University. Dr. John P. Hanley of Stafford Springs read a paper on some cases of interest in his practice. Dr. W. H.

DISBURSEMENTS.

Dr. C. J. Bartlett, Anniversary Chairman,	\$ 31.24	
Stenographer, Annual Meeting,	151.88	
Tuttle, Morehouse & Taylor Co., for publishing <i>Proceedings</i> of 1914,	1,054.05	
Printing, Stationery, etc.,	198.60	
Expenses Semi-Annual Meeting of 1912,	13.54	
Stenographer, Semi-Annual Meeting of 1914,	35.40	
Salary of Secretary,	150.00	
Expenses of Secretary, postage, telephone, etc.,	23.07	
Salary of Treasurer,	25.00	
Safe Deposit Box and Treasurer's Bond,	10.00	
	<hr/>	\$1,692.78
Cash to Balance,		685.43
		<hr/>
		\$2,378.21

ARREARS IN TAXES LAID IN 1913 AND 1914.

	1914	1913
Hartford County,	\$ 57.00	\$12.00
New Haven County,	144.00	9.00
New London County,	47.00	9.00
Fairfield County,	195.00	18.00
Windham County,	33.00	6.00
Litchfield County,	39.00	24.00
Middlesex County,	none	none
Tolland County,	none	none
	<hr/>	<hr/>
	\$515.00	\$78.00

DR. GURDON W. RUSSELL FUND.

INCOME.

Received interest on Bonds,	\$305.00
Received interest on Deposits,	37.31
	<hr/>
	\$342.31

The Fund is invested as follows:

	Par Value
5 Conn. Railway & Lighting Co.'s Bonds,	\$5,000.00
2 Consolidated R. R. Bonds,	2,000.00
Deposit, Conn. Savings Bank,	1,190.80
	<hr/>
	\$8,190.80

Respectfully submitted,

JOSEPH H. TOWNSEND,
Treasurer.

This is to certify that we have this day examined the accounts and vouchers of the Treasurer and find same correct, and the securities listed above to be in his possession.

W. H. CARMALT,
SAMUEL M. GARLICK,
Auditors.

NEW HAVEN, CONN., May 18, 1915.

DR. JOSEPH H. TOWNSEND (New Haven): The disbursements have been quite a little less than last year and in consequence there is considerable more of a balance than we have had in some time. This balance is not any more than is necessary for a working balance, as there are no funds coming in now until after the county meeting, while there will be a good many bills for this meeting, which shows that this balance is not anything that we can get extravagant on, because it is needed for running expenses. I got the last county secretary's reports only last evening, and there is one item of Fairfield County which I don't understand, and it has gone back for change, and it isn't straightened out yet.

This brings up the matter which Dr. Carmalt spoke of, the necessity of some regular time for ending the fiscal year. The suggestion is made, and was a year ago, that the fiscal year should end May 1st. I took it up with the different county clerks and understood that the different county organizations would adopt something along that line, but they didn't do it. It was proposed in New Haven County and failed. I don't know why.

But there is a great deal of trouble. Some counties consider that the fiscal year ends in April at the annual meeting of the county. Others consider that it ends with this State meeting. Others don't think much about it, and they wait until the last minute to send in their reports, so they can make their collections as large as possible.

The by-laws of the State Society require that the Treasurer shall make a report at this meeting, with his account properly audited. That is impossible to do with our present regulations, as I have stated at this meeting, and it seems to me that a by-law ought to be adopted requiring the county clerks to make a report to the Treasurer of all moneys collected by them on May 1st, and that any member of the component society who has not paid his dues by May first or April thirtieth should be considered in arrears. It is the only way that it can be done in order to have the Treasurer present his report properly audited as the by-laws require.

DR. SAMUEL M. GARLICK (Bridgeport): With reference to the matter of the difference in conference with our Treasurer yesterday, he says that they find the difficulty in Fairfield County that they have reports at two or three different times. They report to the County Society at the annual meeting of the County Association. A few days after comes another report, and, in his judgment, if it were practicable that this one report of the treasurer of each county at the time of their annual meeting could be the basis of their report to this Society, it would simplify matters very much. It seemed to him that that would be preferable to naming another day when they would make a report to their association sometime during April, and May first they must compile another report which would be different from the report that they had previously made; if it could be so brought about that that one report of each treasurer at the annual meeting of the County Association could be the basis of their report here it would be advisable.

(6) Report of the Committee on Public Policy and Legislation, by Dr. Everett J. McKnight (Hartford):

REPORT OF CHAIRMAN OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

Mr. President and Gentlemen of the House of Delegates:

The session of the Connecticut General Assembly just closed has had before it for consideration more measures of importance to the medical profession than any within the memory of your chairman.

A matter of great importance to the residents of the State, but which did not receive favorable recognition from our law-makers, was the report of the Commission to Investigate the Advisability of Consolidating Certain State Boards and Commissions and to Investigate the Public Health Laws, appointed by the Governor. You all probably know that Governor Holcomb in his message called attention to the multiplicity of county boards and commissions, where one could as well or better serve the State.

A resolution passed both houses authorizing the Governor to appoint a commission consisting of nine members, a majority of whom shall be members of the General Assembly or of existing state or county commissions, to make a report of its findings and recommendations to this General Assembly on or before April 1, 1915, in respect to the following subjects:

1. The organization and consolidation of various state and county boards and commissions with a view to greater economy and efficiency.

2. The revision of the public health laws with the purpose of fixing more definitely the responsibility of officials, to eliminate waste and duplication of authority and preventive laws with the purpose of ascertaining whether the constructive work of medicine and science may not be more efficient than is possible under the present law.

The following Commission was appointed by the Governor, pursuant to the above resolution:

Dr. William H. Carmalt, New Haven, *Chairman*.

Howell Cheney, Manchester, *Director*.

Ernest P. Chesboro, Willimantic.

George E. Hill, Bridgeport.

Dr. Edward K. Root, Hartford.
Lewis Sperry, South Windsor.
Dudley L. Vail, Winsted.
Lucius E. Whiton, New London.
J. E. Wheeler, New Haven, *Secretary*.

The Commission held many hearings, calling before it all the different boards and commissions which are in any manner connected with public health activities, and I believe honestly and faithfully performed the duty for which it was appointed. One afternoon was devoted to the three medical examining boards. The hearing was in a measure informal, though the number of questions asked some of the witnesses made one of them feel that it bordered on the inquisitorial. It was brought out at this hearing as well as at several others that many boards in the State, although appointed by the State, made no accounting to the Controller, taking as their remuneration the amount of fees received in excess of expenses. You all know how poorly paid the members of the examining boards are and certainly no one begrudges them the small amount they receive for their labors. Your chairman feels that it would be in better taste, though not so required by law, for the examining boards to make an accounting to the Controller and to render bills for services equal to the amount of receipts less expenses. The Commission was not ready to report radical changes in our health laws without a more extensive study. It did, however, add to the report several drafts of acts to carry into effect the suggestions made in regard to consolidation of certain commissions and boards. Two of these are of interest to this Society, viz., an act regulating examining boards for admission to professions and trades and an act in regard to a medical examining board. A hearing was held before the Judiciary Committee, at which the opposition to these bills came almost entirely from three sources, viz., an irregular practitioner, the founder of the so-called natureopathic school of medicine, and two members of this Society. While your chairman believes that the two members of the Examining Board who opposed these bills were honest in their convictions he feels that their conclusions were based upon an erroneous

conception of the relations existing between the Connecticut State Medical Society and the State. The Connecticut State Medical Society does not and should not have anything whatever to do with the licensing of physicians to practice medicine except the nomination of members to the examining board. The examining board is not a creation of the State Medical Society nor a committee of the same, but a board of State officials appointed to examine applicants belonging to the so-called regular school of medicine, and is responsible to the State alone. It seems unfortunate that a change in our Medical Practice Act, so often desired by this Society, should have failed of consummation at this time.

While the work of this Commission has been productive of no immediate results, your chairman firmly believes that their labors have not been in vain and that within a few years a majority of the suggestions made will appear upon the statute books of this State. Certainly Connecticut must soon follow the example of Massachusetts, New York and Pennsylvania and have an efficient department of health which shall have under its control all the health activities of the State.

We will pass by the several bills relating to the control of domestic animals and changes in the different commissions which were introduced in the usual way with the exception of Senate Bill No. 394 concerning the appointment of a Tuberculosis Commissioner and abolishing the State Tuberculosis Commission, providing for the abolishment of the State Tuberculosis Commission and the transfer of its duties to a Tuberculosis Commissioner to be appointed by the Governor.

Toward the end of the session a substitute bill was introduced by the Committee on Humane Institutions, appointing a commission, one member of which shall be a labor representative, one a business man and the other a physician. This passed the Senate on May 17th and was immediately transmitted to the House. When it became known that this bill, if passed, would legislate out of office your acting President and another esteemed member of this Society, the bill was indefinitely postponed in the House and on request from the Senate for a committee of

conference the House adhered to its former action, thereby killing the bill.

H. B. No. 306, chapter 306, Public Acts of 1915, concerning the pollution of water supplies, gives the State Board of Health supervision over all matters concerning the purity of any source of water or ice supply in the State.

H. B. No. 308, chapter 284-1915, concerning the disposal of sewage in inland and tidal waters, gives the State Board of Health power to investigate all points of sewage discharge, etc., and to compel their operation in a manner which shall protect the public health. No public sewage system can be built until the design of the same has been filed with the State Board of Health. The continuance or increase of any pollution of the waters of the state from any existing plant which is prejudicial to the public health is not allowed.

H. B. No. 307, chapter 139-1915, limits the free use of diphtheria antitoxin, tetanus antitoxin and vaccine lymph to those upon whom the purchase thereof would impose a financial hardship, the same to be distributed to town, city or borough health officers, who shall furnish it upon recommendation of the attending physician.

S. B. No. 9, chapter 92-1915, amending an act concerning reports of contagious diseases by physicians. In the existing statute the words "except those of a venereal nature" are stricken out and the following substituted; "provided in reporting any disease of a venereal nature the name of the patient suffering from the same shall not be disclosed."

S. B. No. 72, chapter 264-1915, providing for the elimination of mosquito-breeding places or areas. The director of the Connecticut Agricultural Station may make rules and orders concerning the elimination of mosquitoes and mosquito-breeding places and may enter any swamp, marsh or land for investigation or elimination of any such mosquito-breeding place. The state, any city, borough or town, if sufficient funds have been raised, may eliminate mosquito-breeding places after due notice has been given, etc.

H. B. No. 86, chapter 275-1915, amending an act concerning the appointment and duties of school physicians, will be reported by the Committee on Medical Inspection of Schools.

H. B. No. 802, chapter 104-1915, provides for the revocation of the license of any physician, dentist, veterinarian, pharmacist or registered nurse who is addicted to the use of any drug to such an extent as to render him incapable of performing his duties.

H. B. No. 803, chapter 313-1915, concerning narcotic drugs, follows the general plan of the Harrison law, it being advisable to have a State law in this regard, in order that violations may be brought before local courts.

S. B. No. 22, chapter 229-1915, concerning the practice of chiropody. The Connecticut Board of Examiners in Chiropody shall consist of one physician, one chiropodist and the secretary of the State Board of Health. The act provides for the examination and licensing of chiropodists, the preliminary requirements being that the applicant is of good moral character and has had a high school education or its equivalent. Section 13 provides that no person granted a certificate under the provisions of this act shall display or use the title "doctor" or its synonym either by way of prefix or otherwise.

S. B. No. 172, chapter 110-1915, amending an act concerning the practice of midwifery, requires that non-resident applicants shall present to the examining board satisfactory evidence of a good moral character. Every midwife removing from the town where her certificate is recorded shall cause her certificate to be recorded in the office of the town clerk of the town to which she removes. Every non-resident midwife must renew her license annually.

S. B. No. 527, chapter 205-1915, concerning the Practice of Medicine, Surgery and Midwifery, provides that the preliminary requirements as regards chemistry, physiology and biology shall not apply to applicants who have been graduated from a recognized medical college prior to January 1st, 1915, or to persons who were eligible to examinations before said date and who have failed to pass successfully such examinations. It also provides

that any physician who graduated from a legally incorporated and reputable medical college, and who began the practice of medicine out of this State prior to May 25, 1893, who appears before any one of the examining committees appointed under the provisions of section 4716 of the general statutes, with evidence satisfactory to said committee, that he is a resident of this state or intends in good faith to permanently reside herein, that he has been in actual practice for a period of at least six months in the year immediately preceding the date of his application, that he is of good moral character and professional standing with the endorsement of the state board of medical examiners of the State in which he resides, upon the payment to said committee of the sum of fifteen dollars, he shall receive a certificate of approval without further examination.

Many other measures of importance were enacted which will be reported by title.

Substitute for H. B. No. 268, chapter 212-1915, concerning Inquiry by Coroners.

Substitute for H. B. No. 501, chapter 158-1915, concerning the Burial of Dead Bodies within certain Distances of Dwelling Houses.

Substitute for S. B. No. 319, chapter 206-1915, concerning Public Vaults, Crypts, or Mausoleums.

Substitute for H. B. No. 505, chapter 213-1915, concerning the Transportation of Bodies of Deceased Persons.

Substitute for H. B. No. 42, chapter 28-1915, amending an Act Regulating the Practice of Professional Nursing of the Sick.

Substitute for S. B. No. 54, chapter 316-1915, concerning the Practice of Dentistry.

S. B. No. 494, chapter 184, amending an act concerning the Bottling and Sale of Drinking Water.

Substitute for H. B. No. 332, chapter 227-1915, concerning Domestic Animals.

Substitute for H. B. No. 783, chapter 42-1915, concerning Emergency Kits.

Substitute for S. B. No. 55, chapter 59-1915, concerning the Manufacture and Sale of Mattresses and Pillows.

Substitute for S. B. No. 131, chapter 338-1915, providing for the Incarceration of Inebriates.

Substitute for H. B. No. 644, chapter 336-1915, changing the Name of The Connecticut School for Imbeciles and authorizing the Construction of Buildings for said School on the Property of the State in the Town of Mansfield.

H. B. No. 137, chapter 151-1915, amending an act concerning the Adulteration, Inspection, and Sale of Milk.

H. B. No. 502, chapter 204-1915, amending an act concerning the Sale of Adulterated, Misbranded, or Poisonous Foods.

H. B. No. 797, chapter 252-1915, amending an act concerning the Practice of Pharmacy.

Substitute for S. B. No. 475, chapter 147-1915, concerning Fortune Telling, Clairvoyance, and other Fraudulent Practices.

At the last annual meeting of the House of Delegates there was considerable discussion upon the matter of the automatic revocation of the license of a physician who had been found guilty of producing criminal abortion. It was finally voted that the Committee on Public Policy and Legislation should report to the House of Delegates upon the subject sometime before the meeting of the Legislature. Your chairman was not aware of the passage of this motion until it was discovered by him in looking over a typewritten report of the transactions of the House of Delegates in the early part of the session of the Legislature in order that he might carry out the wishes of the Society in this regard. It appeared to him that the general sentiment was in favor of the passage of a bill of this character, and, in an effort to fulfill his duty to the Society, he requested Attorney Hugh M. Alcorn to draw up and introduce a proper bill. In some way the notice of the hearing escaped the attention of your chairman and also of Mr. Alcorn. No one appearing in its favor, the bill was rejected. Your chairman believes that while the powers of the examining board in recommending to the State Board of Health the revocation of licenses for cause should be broadened, he firmly believes that the court, in fixing the penalty for the commitment of a crime, should have the power of revocation of licenses to practice medicine.

H. B. No. 804, providing for an appropriation of \$500 for blanks and reports of occupational diseases, met with the approval of the Committee on Public Health and Safety, but was rejected on an unfavorable report of the Committee on Appropriations.

S. B. No. 73, providing for the appointment of a State Board of Chiropractic Registration and Examination and defining its duties, was reported unfavorably by the Committee, was rejected in the Senate, tabled in the House and later indefinitely postponed by both branches.

H. B. No. 304, concerning the practice of natureopathy, was reported unfavorably by the Committee, laid upon the table in the House and later indefinitely postponed by both branches.

S. B. No. 492 called for the repeal of section 10 of the optometry act. This was the section upon the adoption of which we agreed to withdraw all opposition to the optometry bill two years ago, and provides that no person granted a certificate under the provisions of this act shall display or use the title doctor or its synonym, either by way of prefix or otherwise, etc. The optometrists appeared in opposition to repeal and it was ascertained that the bill was introduced through the efforts of a man to whom the optometry examining board had refused to grant a license because he persisted in using the title "doctor." Your chairman wishes at this time to publicly express his appreciation of the efforts of the optometrists to secure a strict enforcement of that section of the optometry act.

All the several anti-vaccination bills were reported upon unfavorably by the Committee and promptly rejected in both houses without so far as I can ascertain a single vote in their favor.

Your chairman wishes at this time to express his high appreciation of the manner in which your representatives have been treated by the members of the Committee on Public Health and Safety, who have given more faithful and impartial consideration to the measures which have come before them than any Committee with which he has come in contact. He wishes to thank the members of the Committee on Public Policy and Legislation of this Society for the manner in which they have responded to his every call for assistance, and desires to apologize to them

for not more often taking them into his counsel. If he had called them together every time that their advice would have been desirable they would have had little time to devote to their private business. He wishes especially to express his appreciation of the services rendered by Dr. Paul Waterman, assistant to the member of the Committee from Hartford County.

Respectfully submitted,

EVERETT J. McKNIGHT,
Chairman.

(7) Report of the Committee on Medical Examinations and Medical Education, by Dr. Charles A. Tuttle (New Haven) :

REPORT OF COMMITTEE ON MEDICAL
EXAMINATION AND MEDICAL
EDUCATION.

DR. CHARLES A. TUTTLE (New Haven) : *Mr. Chairman and Members of the House of Delegates:* I had prepared, as was my custom for fourteen years, a report. This year it is rather an outline of what there is to say, simply because the entire report would occupy too much time. I am rather astonished to hear the chairman of the Committee on Public Policy and Legislation state that we had no standing before the Society, so that while I am perfectly glad to read what I have here, it seems inopportune. If we represent the State of Connecticut, and do not represent the Connecticut Medical Society, for me to read this report here would be inopportune. I certainly would state that all these years that I personally have worked and the other members of the Committee have worked on the Examining Board I myself have felt that I was working for the Connecticut Medical Society and not for the State of Connecticut. If I had been in politics and working for the State of Connecticut, I should have expected some pay for the two or three months of every year that we have put into this work, and at a personal expense beyond what we have ourselves received from the work, of two or three hundred

dollars. I regret very exceedingly that we are supposed to have represented the State of Connecticut. I supposed we represented the Connecticut Medical Society, as a committee, and I so feel at the present time in spite of Dr. McKnight's interpretation of it.

This slight report will take but a few minutes and has always been incorporated in the proceedings of the Connecticut Medical Society. I will be glad to read it if it is the wish of the House of Delegates.

Mr. President and Gentlemen of the House of Delegates:

Your Committee on Medical Examination and Medical Education presents herewith its 22d annual report.

The Committee has held seventeen meetings during the year—including the six regular meetings, and has conducted three examinations, each extending throughout two days.

There have been examined forty-nine candidates for certificates of qualification for general practice, of whom thirty-six, or 73.5 per cent, have been found qualified and to whom certificates have been granted. Thirteen, or 26.5 per cent, have failed either in the written or the practical work, and some in both. This percentage of failure is approximately the same as that of the past few years.

Since the requirements of a year of college work before beginning of the study of medicine became effective, the *quality* of the applicants presenting themselves for examination has materially improved. Over 50 per cent now applying present bachelor degrees. The *numbers*, however, have correspondingly decreased. In 1912 there were examined 93; in 1913, 115, and this past year, as stated, only 49. That our examinations are keeping pace with the requirements of modern medicine is evidenced by the fact that in spite of this improved character of material furnished us, our percentage of *failures* remains fully as high as before. Your Committee is convinced that the quality of medical men entering our State at the present time is fully equal to that in any State in the Union, and that in spite of the fact that in many States the requirements for admission to their examinations are higher and more exacting than ours. We trust that in the near future a

hospital year may be added to our requirements. With that exception, and the fact that it gives to your Committee very little discretionary power, the law as it stands to-day is reasonably satisfactory. The enforcement of these advanced requirements has led to many perplexing problems and has taxed the resources of the Committee severely. It has been necessary on several occasions to seek the aid and advice of the Attorney General in interpreting some of the ambiguous phases of the law. At present, however, unless the Legislature now in session forces upon us some undesirable or unwarranted changes, the difficulties seem to have been largely met. Undoubtedly there are some individual cases in which the law has worked a hardship. A few men, who have not the specified qualifications, but desirous of getting into the State, have had introduced into the Legislature special amendments to the law covering their individual cases. These, so far as I am aware, have not passed.

The Committee has taken some part in discussing and in actively opposing some proposed legislation inimical to the best interests of our Society, particularly that affecting and curtailing some of the few legal prerogatives which your Committee, and through it our Society, now has.

The collateral work of the Committee this year has been extensive and had many ramifications, the details of which the writer hopes to have in your hands in a short time.

Enclosed is a copy of the rules under which the Committee is working, a set of questions used at a recent examination, and a list of the successful candidates of the year.

Respectfully submitted,

CHARLES A. TUTTLE, M.D.,

Secretary.

RULES FOR EXAMINATION.

I. Examinations will be held on the second Tuesday of March, July and November, at the City Hall, New Haven, beginning at 9.30 A. M., and lasting two days, closing at 4.30 P. M., of the second day.

2. Examinations will be conducted in writing in the English language, but practical demonstrations may be expected in any or all branches.

3. Examinations for general practice consist of ten questions in each of the following subjects and are usually assigned in the order named: 1. Anatomy. 2. Physiology. 3. Surgery. 4. Obstetrics, including gynæcology. 5. Hygiene and Medical Chemistry. 6. Materia Medica, including therapeutics. 7. Practice, including pathology and diagnosis. Questions in the specialties under respective headings.

4. In order to obtain a certificate of qualification the applicant must obtain a general average of 75 per cent. In no branch shall his percentage be less than 60, and in Practice, Obstetrics and Surgery the minimum requirement will be 65 per cent.

5. Examination fee, \$15.00, payable in advance on the first day of examination. Candidates once rejected may be re-examined at any subsequent meeting of the Board, but must pay full fee for each trial.

6. All candidates must be graduates of some reputable Medical College and must present their diplomas (or a certificate from the Dean of the Medical College) for inspection, to the Secretary of the Board at least two weeks before the date set for the examination. As evidence of the required preliminary education, he must present at the same time a diploma from an accepted high or preparatory school, and a certificate of the successful completion of the Freshman year in a recognized Scientific School or College of Liberal Arts in which were taken full academic year courses in Chemistry, Physics and General Biology. To candidates filing such satisfactory credentials, cards, admitting to the examination, will be issued.

Those applicants who have not the foregoing credentials must qualify in 18 academic units, of which 13 are prescribed and 5 elective. (See "Evaluation of Credentials" blank enclosed.)

7. Each candidate must present his photograph as a means of identification. This will be retained and kept on file by the Secretary.

8. Formal application must be made to the Secretary at least five days before the date of the examination (blanks will be forwarded with the Admission Card). This must be accompanied by a certificate of good moral character signed by two reputable citizens of Connecticut.

9. Questions used at some former examinations will be found in the yearly Proceedings of the Connecticut Medical Society—the Board is unable to supply copies.

10. A license or an examination in another state is not accepted by this Board. All candidates must undergo regular examination. (This rule may be suspended in cases where there is exceptional merit in scientific and professional attainments.) It is unlawful to practice in this State before examination and license. No temporary or provisional certificate can be given.

DIGESTS OF THE LAWS TO 1912.

a. No person shall, for compensation, gain or reward, received or expected, treat, operate or prescribe, for any injury, deformity, ailment or disease actual or imaginary, of another person, nor practice midwifery, until he has obtained a certificate of registration.

b. No person shall obtain a certificate of registration until he has passed a satisfactory examination before one of the examining boards appointed for the purpose, nor until he has filed duplicate certificates signed by a majority of said examining board, stating that they have found him qualified to practice medicine, nor until he has filed duplicate statements subscribed and sworn to by him upon blanks furnished, giving his name, age, place of birth and present residence, stating of what medical college he is a graduate, and the date of said graduation together with such other information as shall be required. No person shall be eligible to said examination until he presents to the board, by whom he shall be examined, satisfactory evidence that he has received a diploma from some legally incorporated and reputable medical college and complied with the requirements of the law concerning preliminary education. Any person passing such

examination and filing said certificates and statement shall receive from the State Board of Health, upon payment of two dollars, a certificate of registration which shall state that the person named has been found qualified so to practice. He shall be registered in the town wherein he resides or the town nearest thereto—but shall be entitled to practice anywhere in this State without further registration.

RULES FOR CONDUCTING EXAMINATIONS.

First, Help of every kind must be removed from the reach and sight of the candidate. Any candidate detected trying to give or obtain aid may be instantly dismissed from the room, and his or her paper for the entire work canceled.

Second, Questions must be given out and answers collected punctually at the time specified for that section.

Third, If the candidate withdraws himself or herself without permission from the sight of the examiner, his or her examination shall be closed.

Fourth, Pens, blotters, paper or blank books and ink will be supplied by the Secretary. No separate papers can be accepted unless thus supplied.

Fifth, The examination shall continue two days, the session of the first day being from nine-thirty to eleven, eleven to one, two to four, four to six, respectively; the session of the second day being the same, but closing at four-thirty instead of six o'clock.

EXAMINATION QUESTIONS, NOVEMBER 10-11, 1914.

ANATOMY.

(*One and one-half hours.*)

1. Give the origin and insertion of the following muscles: (a) biceps (of the arm), (b) biceps (of the leg), (c) latissimus dorsi, (d) trapezius, (e) tibialis anticus.

2. Describe the upper extremity of the humerus.

3 and 4. (a) Name the branches of the external carotid artery, (b) mention briefly the course of each.

5. Give the relations of the internal jugular vein at the level of the cricoid cartilage.

6. What regions do the axillary lymph nodes drain?

7. Describe the common bile duct, giving its relations.

8 and 9. Describe the course of (a) the musculo-spiral nerve in the axilla and arm; (b) into what nerves does it divide, giving in general their course; (c) what muscles are supplied, in whole or in part, by the musculo-spiral nerve?

10. (a) Where is the testis placed in early fetal life; (b) describe its descent; (c) what structures form the inguinal canal in the male?

PHYSIOLOGY.

(*Two hours.*)

1. Define physiology and delimit its branches.

2. Name the excretory organs. What do they excrete? (b) Name the ductless glands. What is the specific office of each in the human economy?

3. In acute lobar pneumonia, describe the local lesion. Name the disturbed functions and show how such are produced.

4. Define central nervous system, sense organ, reflex action and inhibition. (b) Trace the afferent and efferent nerve impulses in colic of the colon.

5. What structures of the kidney are chiefly concerned in filtration? What effect does increased blood pressure have on the process?

6. In the human economy from what is glycogen derived? Name two structures of the body in which it is stored. Into what is it changed for solution in the blood?

7. Name two heart lesions that might result in broken compensation, and show how the normal function of the heart would be disturbed.

8. What is the function of the medulla oblongata?

9. What is lymph and the lymphatic system? Why is this system so essential in the human economy?

10. Describe the interchange of gases in the lungs in the function of respiration.

SURGERY.

(Two hours.)

1. Describe briefly four of the most common germs against which the surgeon must be on guard and describe both the local and constitutional treatment should infection occur.
2. Give the diagnosis and treatment of a simple fracture of the lower end of the humerus.
3. Symptoms and signs of acute appendicitis in the order in which they arise.
4. What are adenoids of the naso-pharynx? What symptoms call for their removal?
5. Symptoms and treatment of carbuncle.
6. Describe the symptoms and complications of otitis media.
7. How would you treat a persistent nasal hæmorrhage?
8. Describe the early symptoms and signs of syphilis.
9. State briefly your views upon nitrous oxide anæsthesia.
10. During the afternoon you will be asked to mark on a living body the incisions you would make for some of the common operations.

HYGIENE AND MEDICAL CHEMISTRY.

(One and one-half hours.)

- 1 and 2. Discuss clothing. (a) Heat conductivity, (b) hygroscopicity, (c) materials, cotton, linen, wool, silk.
3. (a) Upon what does the nutritive value of food depend? (b) Give the caloric value of one pound of the following: Roast beef, lean bacon, broiled chicken, cod fish, canned salmon.
4. What are the chief advantages and disadvantages, from the sanitary standpoint, of (a) shallow wells, (b) artesian wells?
5. Mention some simple tests to determine the sources of pollution of well water.
6. What prophylactic measures should be taken against Asiatic cholera?
- 7 and 8. (a) In the examination of recruits for an army what would be causes for rejection? (b) Discuss in a few words the necessity of care in the selection of recruits.

9 and 10. What would be your method of bringing the soft, poorly developed man, though sound in heart and lungs, to good physical condition?

OBSTETRICS AND GYNÆCOLOGY.

(*Two hours.*)

1. (a) What are the uses of pituitary body in obstetrics? (b) When should it be used? (c) Best preparation and doses?

2. (a) What are the symptoms of extra uterine pregnancy? (b) From what must it be differentiated? (c) Detail your method of treatment.

3. What is the (a) composition, (b) function, of the liquor amnii?

4. (a) Describe Hagar's sign of pregnancy. (b) When first available? (c) Upon what does its production depend?

5. (a) When is uterine packing indicated? (b) What is the best material? (c) Give the technique.

6. Define (a) position; (b) presentation; (c) give diameters of child's head.

7. You are called to a case and find in the vagina an extremity; complete your diagnosis and give your procedure in completing delivery.

8. (a) Give the causes of chronic ovaritis. (b) Name three symptoms. (c) How would you differentiate from salpingitis?

9. From what must you differentiate an ovarian cyst when small and in the pelvic cavity?

10. (a) Anti-partum hæmorrhage, give two causes, treatment. (b) Post-partum hæmorrhage, give three causes, treatment.

MATERIA MEDICA AND THERAPEUTICS.

(*Two hours.*)

1. (a) Explain the difference between the principles underlying vaccine therapy and serum therapy. (b) State the dangers in their application to the human being.

2. (a) On what theories or principles are cold baths and cold sponging resorted to? (b) State the indications calling for such measures and how applied.

3. (a) What errors in diet or hygiene or occupational conditions may cause or aggravate acute eczema? (b) Write a prescription for a suitable application, stating the special purposes to be accomplished. (c) State one drug to be used internally, with the reasons for its employment.

4. Name the alkaloids and the U. S. P. preparations of opium. What are the chief indications for the use of each and state the dose of each? How determine the correct dose for a child?

5. Salvarsan: discuss briefly its chemical composition, properties, action and use, dosage, method of administration and precautions regarding the same.

6. Scopolamine: discuss its derivation, properties, action, use and incompatibles.

7. *Prunus Virginianæ*: its common name, action, preparations, incompatibles. (b) The method of making the syrup and chemistry of the same.

8. What drugs would you use in acute articular rheumatism? Write a prescription for each.

9. How do Tinctures differ from Spirits? Give several examples of each.

10. Is electricity indicated in acute tubercular synovitis? If so what form would you use? Name several electric modalities.

PRACTICE, DIAGNOSIS AND PATHOLOGY.

(Two and one-half hours.)

1. (a) Give the pathology of anterior poliomyelitis. (b) Give the symptoms at the onset of the disease. (c) What symptom is characteristic of the disease? (d) What is the period of incubation?

2. (a) Differentiate broncho pneumonia from lobar pneumonia. (b) Which would you expect in a male 57 years old following an influenzic seizure?

3. (a) Give the pathology of lobar pneumonia. (b) Describe the organism causing it.

4. (a) What is blood pressure? (b) How is it measured? (c) What is the normal blood pressure in young adult? (d) What diseases are characterized by high blood pressure?

5. (a) What is immunity? (b) Name seven diseases that confer absolute immunity against future attacks.
6. Define: (a) Delusion. (b) Illusion. (c) Hallucination.
7. (a) What are the symptoms of acute neuritis? (b) Give three causes. (c) Explain just how electricity is beneficial in its treatment.
8. (a) Describe sycosis. (b) From what must it be diagnosed? (c) What would be the general plan of treatment?
9. What are (a) the causes; (b) the symptoms; of œdema of the lungs?
10. Differentiate an attack of cerebral hemorrhage from one of cerebral embolism.

QUALIFIED—JULY, 1914.

- B. I. Dryfus, Univ. Louisville, 1913.
S. I. Aranhi, P. & S., Balt., 1914.
R. B. Garland, P. & S., Balt., 1913.
R. F. Sudensticker, Yale, 1911.
S. W. Moovring, Harvard, 1901.
W. T. Bull, Columbia, 1902.
A. K. Curtiss, Tufts, 1905.
F. W. Comstock, Tufts, 1913.
A. F. Hewitt, Syracuse Univ., 1913.
A. R. Pillsbury, Univ. Vt., 1914.
E. H. Metcalf, Jefferson, 1914.
J. W. Bramfield, Univ. Pa., 1913.
H. L. W. Kellogg, Columbia, 1903.
T. R. Bradley, Univ. Md., 1914.
A. C. Freeman, Univ. Vt., 1913.
D. G. Russell, Yale, 1914.
F. E. Foley, Yale, 1914.

QUALIFIED—NOVEMBER, 1914.

- R. D. Roller, Univ. Richmond, 1905.
W. A. Ruter, Cornell, 1913.
G. Andronaco, Univ. Catania, 1912.
B. S. Main, Univ. Mich., 1910.

B. C. Maranty, Md. Med., 1912.
E. Brodsky, Univ. Zurich, 1908.
W. E. Smith, Univ. Mich., 1910.
J. F. Young, Columbia, 1913.
W. M. Stahl, Univ. Mich., 1914.
W. L. Sheahan, Jr., P. & S., Balt., 1912.
M. A. Kinsella, Tufts, 1912.

QUALIFIED IN MARCH, 1915.

H. R. Wormley, Rush, 1906.
T. W. Worthen, Dartmouth, 1911.
H. S. Reynolds, Albany, 1914.
B. S. Beach, Columbia, 1914.
J. Shulansky, Columbia, 1903.
E. S. Gushn, Harvard, 1903.
C. W. Knapp, Columbia, 1912.

(8) Report of the Committee on Scientific Work, by Dr. Walter R. Steiner (Hartford):

REPORT OF THE COMMITTEE ON SCIENTIFIC WORK.

Mr. President and Gentlemen of the House of Delegates:

The Committee on Scientific Work present the accompanying programme for this meeting of the State Society. It has been prepared in accordance with the custom, in vogue since 1905, of devoting the first session to the specialties and assigning the subjects of Surgery and Medicine to the last two sessions on the following day. We have endeavored to have the whole State represented on the programme. Some sections have, of necessity, been slighted but this should not deter the representatives of these sections from attending. As Sir William Osler told us in New Haven, in 1903, "encouragement in his day's work and a betterment of mind and method" is gained in these State meetings for every member. The Chairman, concluding a ten years continuous service as a member of this Committee, can vouch for the honest striving of the Committee to produce annually the best possible programme.

WEDNESDAY MORNING, MAY 19, 1915.

Epiphyseal Separation of the Upper End of the Femur—George W. Hawley, Bridgeport. (Discussion opened by E. H. Arnold, New Haven, and Ansel G. Cook, Hartford.)

Some Precancerous Affections—John E. Lane, New Haven. (Discussion opened by James D. Gold, Bridgeport; Thomas M. Bull, Naugatuck; William H. Carmalt, New Haven.)

Colony Treatment of Epileptics in Connecticut—Donald L. Ross, Mansfield Depot. (Discussion opened by Edwin A. Down, Hartford, and Max Mailhouse, New Haven.)

The Anatomical Method in the Diagnosis of Cancer of the Breast—Henry C. Russ, Hartford. (Discussion opened by John C. Rowley, Hartford, and Charles J. Bartlett, New Haven.)

The Faucial Tonsils and Their Proper Treatment—E. Terry Smith, Hartford. (Discussion opened by Charles R. C. Borden, Boston (by invitation); Henry L. Swain, New Haven, and Carl E. Munger, Waterbury.)

THURSDAY MORNING, MAY 20, 1915.

The Proper Management of Labor by the Physician—David D. Reidy, Winsted. (Discussion opened by Richard F. Rand, New Haven, and T. Weston Chester, Hartford.)

The Work of the State Tuberculosis Commission; its Development and Present Outlook—David R. Lyman, Wallingford. (Discussion opened by Stephen J. Maher, New Haven.)

Foci of Infection in Chronic Arthritis—Paul P. Swett, Hartford. (Discussion opened by George Blumer, New Haven, and William Porter, Jr., Hartford.)

Carbohydrate Indigestion—Wilder Tileston, New Haven. (Discussion opened by H. S. Arnold, New Haven, and L. M. Gompertz, New Haven.)

THURSDAY AFTERNOON, MAY 20, 1915.

Prolapse of the Uterus in Elderly Women—Daniel Sullivan, New London. (Discussion opened by Phineas H. Ingalls, Hartford, and S. M. Garlick, Bridgeport.)

Some Problems Connected with Gastro-enterostomy—Joseph M. Flint, New Haven. (Discussion opened by John W. Churchman, New Haven, and E. J. McKnight, Hartford.)

Bone Graft in Potts Disease—James L. Moriarty, Waterbury. (Discussion opened by James C. Wilson, Hartford, and William F. Verdi, New Haven.)

Malposition of the Cæcum Complicated by Appendicitis, With Report of Three Cases—Alfred M. Rowley, Hartford. (Discussion opened by Edward R. Lampson, Hartford, and George N. Bell, Hartford.)

Values in Surgery—Edward Weir Smith, Meriden. (Discussion opened by Patrick J. Cassidy, Norwich; Seldom B. Overlock, Pomfret, and Max Mailhouse, New Haven.)

Respectfully submitted,

WALTER R. STEINER, *Chairman*,
GEORGE BLUMER,
M. McR. SCARBROUGH.

(9) Report of the Committee on Honorary Members and Degrees, by Dr. D. Chester Brown (Danbury) :

REPORT OF THE COMMITTEE ON HONORARY MEMBERS AND DEGREES.

Mr. President and Gentlemen of the House of Delegates:

The Chairman of this Committee has been in communication with the other two members of the Committee, Dr. Frank Hallock and Dr. S. B. Overlock, and neither one of the three members of the Committee have received any requests that the names of any men be presented for honorary recommendation. We therefore have no recommendations from ourselves or from other members of the Committee. We have no names to suggest to you for conferring honorary membership.

Adjourned at 1:30 P. M. to meet again at 5 P. M.

WEDNESDAY AFTERNOON, MAY 19, 1915.

The second meeting of the House of Delegates was held at 5.50 P. M., May 19, 1915, at the Hunt Memorial Building, 38 Prospect Street, Hartford. The President, Stephen J. Maher, presided. The following responded to the roll call: Dr. Walter R. Steiner, Dr. Wm. H. Carmalt, Dr. Patrick J. Cassidy (councilors), Dr. Wm. R. Miller, Dr. Joseph A. Cooke, Dr. Joseph H. Townsend, Dr. Frederick G. Graves, Dr. Walter S. Lay, Dr. George H. Jennings, Dr. Martin V. B. Dunham, Dr. Frank W. Stevens, Dr. Robt. C. Paine, Dr. John E. Loveland (delegates), the President, Dr. Stephen J. Maher, and the Secretary, Dr. Marvin McR. Scarbrough.

The following reports were made, accepted, and ordered placed on file:

(10) Report of the Committee on Arrangements, by Dr. E. Terry Smith (Hartford):

REPORT OF THE COMMITTEE ON ARRANGEMENTS.

Mr. President and Gentlemen of the House of Delegates:

The Committee on Arrangements were very undecided about this meeting on account of the death of our President, Dr. Oliver C. Smith, whom we all loved so dearly. After the funeral, I asked the pall bearers, including Dr. Carmalt, Dr. Hallock, Dr. Flint and Dr. Steiner, what was best to do. It was a question whether or not it would be advisable to have the meeting in New Haven this year rather than in Hartford because our association with Dr. Smith had been so intimate and of so many years and we thought so much of him. We were afraid the meeting would have a memorial aspect.

At Dr. Carmalt's suggestion the meeting was held here and the smoker was given up. We arranged to have a memorial dinner and made a special point of its being a memorial dinner and not a banquet. After the dinner has been served, Dr. Bradstreet,

one of Dr. Smith's dearest friends, will deliver an address of appreciation.

(11) Report of the Committee on a Sanatorium for the Nervous Poor, by Dr. Rienzi Robinson.

Dr. Robinson was unable to be present but sent the following letter to the Secretary:

May 4, 1915.

MARVIN McR. SCARBROUGH, M.D.,
76 Wall Street, New Haven, Conn.

Dear Doctor:

Yours of April 2 I found awaiting me on my return from the South, where I have been spending the winter. In regard to the Committee on a Sanatorium for the Nervous Poor, perhaps you remember that at the meeting last year the trend of the discussion was that the subject better be dropped for a time as so many other things were being put before our legislature that it was deemed unwise to add more until some of those already being pushed should be disposed of. For this reason I have not called the Committee together, waiting for a more opportune time.

To keep the matter before the profession and keep up an interest in the matter, I submitted a short paper to the Publication Committee to be published in our annual book of proceedings. The Committee returned this paper to me declining to publish it for want of space—which led me to believe that they thought it best to drop all agitation on the subject, for the present at least.

I fully concurred in the expression of members in open meeting and in the action of the publishing committee.

Fraternally yours,

RIENZI ROBINSON.

(12) Report of the Committee on a State Farm for Inebriates, by Dr. F. H. Barnes (Stamford):

REPORT OF THE COMMITTEE ON A STATE FARM FOR INEBRIATES.

House of Delegates, Connecticut State Medical Society,—Gentlemen:

Your Committee on a State Farm for Inebriates desire to report that they did not deem it feasible to present a bill for a State Farm for Inebriates at this session of the legislature. The Governor and the Legislative body as a whole express themselves for economy and it has been their policy as much as possible to cut down on all appropriations. For this reason it was thought best to postpone any action in the matter until later. On the other hand, Dr. T. G. Alcorn of Thompsonville, Conn., Senator from that district, has presented a bill for a State Farm for Inebriates along the lines originally suggested. We understand it has been favorably acted upon by the Committee on Humane Institutions. It will now go before the Committee on Appropriations, but has very little chance for success. Would suggest that it might be unwise to accept this as a report from the committee and at a subsequent meeting of the Society appoint a new committee to take up the work if Dr. Alcorn's bill does not become a law.

Respectfully submitted and signed by

F. H. BARNES,
Chairman.

STAMFORD, May 3, 1915.

(13) Report of the Committee on Medical Inspection of Schools, by Dr. E. W. Goodenough (Waterbury):

REPORT OF THE COMMITTEE ON MEDICAL INSPECTION OF SCHOOLS.

Mr. President and Gentlemen of the House of Delegates:

An attempt was made this year to revise the Connecticut Medical Inspection Laws. The present statute is the very good

permissive law, passed in 1907, and prepared by Mr. Howell Cheney, Chairman of the State Board of Education. Two years ago, the hearing on the bill which your committee presented was held before the Committee on Education of the 1913 legislature. At their recommendation it was rejected.

To get a favorable report from that committee, it is necessary to have the support of the State Board of Education. Our committee, this year, met Mr. Howell Cheney in conference. At my suggestion, Dr. Kate C. Mead of Middletown drew up and presented House Bill No. 86, which was referred to the Committee on Public Health and not to the Committee on Education. This bill could not pass in the form presented. It was impossible for us to properly formulate a Committee Bill until after February 1, which ended the admission of new legislation. The hearing came so early on House Bill No. 86 that our Substitute Bill was hurried through. Like many substitute bills it was entirely satisfactory to no one and was finally rejected.

There are disadvantages to law-making in an old original state. Because we had a school fund and our present town representation, our state school department has been a bulwark of Connecticut conservatism. It has tremendous power. District Committees have one type of power, Boards of School Visitors another. Cities have Boards of Education which sometimes have partial authority and at others combine the power of Board of School Visitors and of District Committee.

We have a State Board of Health composed partly of physicians and partly of laymen with the secretary a member of this committee. We have County Health Officers who are lawyers and control health appointments in the smaller towns, and we have cities with independent Boards of Health who appoint their own health officers. All of course really wish a healthy public—but work for it in their own way. Where the cities and boroughs do not coincide with town limits we may have two sets of health officials in the same town with a consequent clash of authority.

Some years ago we had a Constitutional Convention. It started beautifully. Before it was finished, the clash of interests killed

the convention and took years from the life of those men most interested in a unified state development. If the six lawyers who have our statutes to revise would eliminate nine-tenths of them, the \$42,000 would be well earned.

Medical inspection of schools seeks to accomplish two things. The hygiene of school buildings and the prevention of communicable disease through the schools are distinctly health measures and should come under the charge of some one of the health authorities. Because of clash of authority over communicable disease in New London, the Board of Education transferred their well-started medical inspection to the charge of the Board of Health.

A second and, to my mind, the most important factor of medical inspection, is the development of personal hygiene through constant daily instruction. This is in its last analysis of course a health measure. It means the care of the eyes, teeth and nasopharynx. It means proper posture in school, clean hands, clean skins, clean clothes, clean home. The children of the Primary grades, under the daily teaching and influence of their teachers and school nurses, develop into healthy, grown-ups later. In this second class belongs the teaching of sex hygiene to the older pupils. For all of this, to get the best results, the school department must have some responsibility.

Minnesota gives divided responsibility something after these lines. Control of contagion to health authorities, work in retarded development and personal hygiene, with school nursing to educational authorities.

Medical inspection forced upon cities and towns before the authorities or the public wish it means in nine cases out of ten worthless medical inspection. There is now a large amount of literature, in pamphlets and newspapers, which calls the attention of the public to the value of school inspection.

The work done in the city of Bridgeport under the Board of Health by Dr. Florence A. Sherman and her assistants, is an education in itself. I enclose in my report some outline of her work. Also report of Superintendent of Schools in Wallingford. These are two bright spots in the work of the last year. From

New Haven, with a little patient waiting, I believe, we have for Connecticut a solution of our problem. This is through the Department of Hygiene and Public Health provided for in the gifts last year to the medical department of Yale University. The present President of the New Haven Board of Health is Professor of Pathology at Yale and Mr. Howell Cheney, President of the State Board of Education, is a member of the Yale Corporation. Under the leadership of this department, I feel sure we will have workable coöperation between the State boards of health and education in the development of medical inspection of schools.

The following information is supplied to the Bridgeport schools through the Health Department by Dr. Florence A. Sherman, Medical Inspector of Schools:

HEALTH DEPARTMENT

BRIDGEPORT, CONN.

CIRCULAR TO PRINCIPALS AND TEACHERS

With the increase of the staff, it is hoped that the medical supervision of school children will be more efficient than it has been possible to make it before. The work will be conducted somewhat differently than in previous years, because more help has made it possible to install a certain system, in the schools, as well as outside. We will ask your patience and coöperation necessary in installing changes and assure you we will do our best to bring about the desired routine and schedule as soon as possible.

A routine inspection will be made of all grades up to the 7th. Beyond that, only pupils referred by principals or teachers will be examined. Dr. Sherman will make a routine examination of all kindergarten and first and fifth grade children, also of all children entering school for the first time, and effort will be made to give special attention to backward children, and to children returning to school after any illness.

Grades in which routine inspection has already been made, except the fifth, will be re-inspected by the nurse assigned to your particular school, under Dr. Sherman's direction and supervision. This work will be done as rapidly as possible consistent with the number of schools that the nurse has in charge. Any pupil whom the nurse may feel needs a reëxamination will be referred to the inspector.

The nurse will note on the physical record card of each pupil, whether defects have been corrected or not and will credit the same when corrected, re-notifying parents where nothing has been done and, in extreme cases, make a home visit to confer with parents.

The regular weekly visits of the nurse to your school is for the specific purpose of attending to the contagious skin and scalp conditions, such as impetigo, ringworm, scabies, pediculosis (live cases), advising, treating and excluding the same as the case may need. All other cases come under the routine work and must be taken care of then. Principals and teachers are urged to note this particularly. Confinement of work to this class of cases only at the regular visit of the nurses is absolutely necessary in order to accomplish other essential duties in their schedule. Coöperation of teachers in sending only such cases to the nurse on her regular day, will assist us materially and enable us to serve you better in an all round way.

Dr. Sherman will send the notice of her routine inspection a few days beforehand so that all physical record cards may be ready. Special care is asked that the correct address be given in order to save valuable time if a follow up call seems advisable.

She may be communicated with during school hours by telephoning the Health Department (3600).

Pupils may be sent to the school inspector at the Health Department each school day between 4 and 5 o'clock only. This hour is for advice to children sent in by principals or teachers, for reëntrance permits, etc., etc. (Note change in the hour.)

Notice of the inspector's scheduled visits to large and small schools has already been sent on type-written postals, also notice of nurses' weekly visits has also previously been sent.

School clinics are held the same days as last year.

Eye clinic 1:30—3:00 P. M. Friday.

Skin clinic 3:00—4:00 P. M. Thursday.

Nose and throat cases needing clinical help are investigated and arranged for at the city hospitals.

The dental work this year is supervised by Dr. Fones.

Teachers are asked to please make special note of pupils' physical record cards. Be sure they are transferred from grade to grade, school to school, city to city. These cards should be of great assistance to the teachers in individualizing and classifying their work. Unless teachers see that these cards are passed on, it means for us much repetition of work and loss of valuable data which should militate for the child's best good.

The object of this work is to secure better physical conditions of school children. To teach the laws of health primarily. Coöperation of all concerned will greatly facilitate the work.

Will you not make a point of taking a personal interest especially in cases brought to your notice who need remedial measures in some form? All working together cannot fail to bring about results,—results are what we are working for.

Respectfully yours,

FLORENCE A. SHERMAN, M.D.,
Medical Inspector of Schools.

BRIDGEPORT, CONN., Oct., 1914.

DAILY HEALTH RULES FOR SCHOOL CHILDREN

DEPARTMENT OF HEALTH

BRIDGEPORT, CONN.

MEDICAL INSPECTION OF SCHOOLS

FLORENCE A. SHERMAN, M.D., *Medical Inspector*

Plenty of Sleep! Ten full hours of Sleep are necessary for growing boys and girls. Sleep with windows open in all kinds of weather.

Windows should be down from the top and up from the bottom in order to insure movement of air which is the secret of good ventilation.

Fresh air makes sleep more restful, lessens the chance of colds, sore throat, etc.

GETTING READY FOR BED:

If possible do not wear clothing to sleep in which has been worn during the day. It is not healthful. Hang clothes over a chair or something so they will air during the night.

Always turn the stockings when taken off.

Great care should be given to the feet. They should be washed every night. Clean stockings should be put on at least every other day, and kept well mended. Boys and girls seven years old can be taught to wash and mend their own stockings.

Clean feet, clean stockings and sensible shoes with broad soles and low heels for boys and girls alike are absolutely necessary for good health and for correct standing and walking.

Correct walking, standing and sitting mean stronger, healthier boys and girls, men and women. Walk, stand and sit with chest up and chin in. Before going to bed always brush the teeth, rinse the mouth well, and wash the face and hands and clean the nails.

It is best to sleep with the body quite flat. Usually one small pillow is enough.

GETTING UP IN THE MORNING:

Put on shoes and stockings first. It is not clean to walk around the room with bare feet.

Then brush the teeth, rinse the mouth carefully. Thoroughly clean the tooth-brush and hang it to dry and air after using.

Then in this order wash: Face, ears, neck, arms, hands. Use soap and brush for hands and finger-nails. Always clean the finger-nails after washing the hands.

Then brush and comb the hair nicely. Boys' hair should be cut short. Small Girls also should have short hair. It is much more easily taken care of, and is better for the hair later in life.

During school days it is very necessary that the hair be very carefully watched, and frequently washed (at least once a week), in order to avoid the contagious scalp diseases which are always liable to occur when a large number of people are brought together. It's no disgrace to get trouble with the head but it is a disgrace to keep it.

If possible everybody should have his own wash-cloth, towel, soap, brush and comb. (A tooth-brush should never be used by anyone but the person who owns it.)

It is necessary that we have all the things just spoken of, that they belong to just us and we must keep them clean. This prevents diseases and helps us to form nice habits of personal cleanliness, early in life. Being clean has a great deal to do with being well, and doing good work in school and getting work after leaving school.

We must go to bed early so that we can get up early enough in the morning to wash ourselves carefully and have plenty of time to eat breakfast. Time to eat slowly, chew our food well, so that the stomach can take care of what we eat, and make our bodies grow strong.

After breakfast always go to the toilet. It is of the greatest importance that boys and girls should form regular habits of going to the toilet. This is the way that the body gets rid of what it does not need, and which if kept in the body would make us sick.

Always go to the toilet before going into school in the morning, again at recess, and before going into school in the afternoon, and always before going to bed at night. If this is done it will not be necessary to leave the classroom during school hours (unless for some reason your Doctor sends your teacher word that it is necessary).

The hands should always be washed after going to the toilet.

Practice deep breathing going to and from school. Fill your lungs with good fresh air every time you get a chance.

Inhale and exhale with the mouth shut. If your nose and throat are all right it should be easy to do this!

Walk on the sunny side of the street (except in very hot weather).

People need sunshine as much as plants do. Learn to love sunshine, fresh air, soap and water. These are things everyone can have and are most necessary for good health.

Learn to love your baths! We should have two warm baths each week (that means the body washed all over), clean clothes, twice a week, oftener if possible, so that you will smell sweet and clean. Clothes that are worn next to the body should be changed at least twice a week, so that you will be nice to be with other people. If you are clean some other boy or girl will want to be clean too.

Remember the clean handkerchief, or clean cloth for the nose, every single day. Learn to use your handkerchief well,—Keep the Nose clean.

Never use a handkerchief belonging to anyone else, nor let anyone use yours. Germs are carried in this way from one to another.

Do not wear sweaters indoors, either at home or at school. If we wrap up in the house we are liable to get cold when we go out. It makes our bodies tender and sensitive and more likely to get diseases.

Do not wear rubbers indoors, either at home or in school.

A FEW THINGS ABOUT FOODS FOR SCHOOL CHILDREN :

Always wash the hands before and after eating.

The good health of a person depends largely upon the kind of Food he was given when a child.

Children should eat at regular times.

What Foods Should Do.

1. Keep your muscles strong.
2. Keep you warm.
3. Keep your blood in good order.
4. Make you feel strong and like working.

Some foods make you strong, some keep you warm, and keep your blood clean. What is needed is the right combination of all these kinds.

Do not begin the day on sweet things (no pie or cake).

If possible the Breakfast of a school child should be:

A dish of well-cooked Cereal with milk and a little sugar.

A soft-cooked Egg, Bread and Butter, Fruit if possible.

Cocoa, or a cup of half Hot Milk and Hot Water.

Drink some water with each meal.

If possible a Dinner should be:

Some simple Soup (meat or vegetable).

Some Meat, a baked Potato, or a boiled Potato, Carrots and Macaroni, etc.

A fresh vegetable (Kale, Spinach or Cress, etc.).

Bread and Butter, a simple Pudding.

If possible a Supper should be:

Cereal and milk, Bread and Butter, Stewed Fruit.

Milk or Cocoa to drink, a simple cake.

Especially good Cereals:

Corn-meal, Oat-meal, Hominy, Rice, Wheatena, Ralston's Wheat Foods, etc., etc.

Ready-to-eat Cereals:

Shredded Wheat Biscuits, Toasted Corn Flakes, Puffed Rice, Puffed Wheat, Grape Nuts, etc., etc.

Any of these, with milk and a little sugar, make the basis of a good breakfast or supper.

Cereals should be a large part of a growing child's diet.

Meat once a day is often enough for most people, best eaten at noon time.

Try to get your parents to buy the kind of Foods that are best for your body's growth. If you do not like certain foods that are good for you, try to learn to like them. We "eat to live" not "live to eat."

DRINKS FOR SCHOOL CHILDREN:

Water is very necessary for the health of the body. Drink some water with each meal. Three or four glasses of water should be taken every day, best between meals.

No Tea or Coffee or Beer for School Children! They stop the growth of the body, and make one pale, thin and nervous. Tea and Coffee and Beer harm the nerves and heart.

Drinks that may be safely used in place of Tea, Coffee or Beer:

Milk, which is a real food as well as drink. (Milk has in it all the things necessary for the growth of the body.)

Cocoa, also a food as well as drink.

Cambric Tea, equal parts of hot water and milk, with a little sugar.

Sometimes a little ground cinnamon is added and it is called "Cinnamon Tea."

Cereal Coffee, such as "Postum," is good for variety, and is nourishing.

Do not bring Candy, Cake, or any sweet things to school for lunch. Bring Fruit (apples, oranges or bananas), Sandwiches, bread-and-butter or Nuts. A boy or girl does better school work after eating a simple lunch at recess.

At recess, play some active Games! Stay in the Sunshine. Get your blood to circulating. Try the Folk Dances, Games, etc. You will find that you study better after you come in.

After School hours stay out of doors all you can, until supper-time.

After Supper think over these health rules and see where you can do better to-morrow than you did to-day!

Set for yourself high standards of personal cleanliness. Get plenty of Sleep and fresh air.

Good Health depends largely upon ourselves. Upon the care we give our bodies in all the ways spoken about.

If these briefly-outlined Health Rules serve to make boys and girls think more carefully about forming right habits for daily living the writer will be happy indeed to have had a small part in it.

April, 1915.

KEEP THE BABIES WELL
DEPARTMENT OF HEALTH
LITTLE MOTHERS LEAGUE

THIS IS TO CERTIFY *that* _____
is accepted as a VOLUNTEER Aid of the DEPARTMENT OF HEALTH,
and is a member of the LITTLE MOTHERS LEAGUE
of Public School _____ *of Bridgeport, Conn.*

Issued by _____
Medical Inspector.

Date _____

A. E. McLELLAN, M.D.
Health Officer.

The Superintendent of the Wallingford schools supplies the following circular:

SCHOOL HYGIENE.

SUGGESTIONS FOR PRINCIPALS, TEACHERS, JANITORS, SCHOOL NURSE
AND MEDICAL INSPECTORS.

Issued by the Department of Superintendence with the coöperation of the above forces and with the object of increasing efficiency through team work.

IMPORTANCE OF THE PROBLEM.

Wallingford has a school plant worth \$200,000, and makes an annual expenditure of more than \$60,000 in educating its children.

School hygiene is fundamental, since the highest development of mental and moral powers of the pupils can only be secured when pupils have sound bodies.

If all the school authorities named above can coöperate to furnish our pupils a knowledge of safe, sanitary and hygienic conditions of living, so that they, with sound health, may carry into the homes of the community an adequate knowledge of proper hygienic conditions of living we shall have helped to solve the health problem of the community.

If we fail to do all we can and neglect the health of the children, we neglect a fundamental part. Knowledge at the price of health is not worth what it costs.

SOME THINGS TO STUDY AND EMPHASIZE.

Ventilation—Physical welfare and mental efficiency are promoted by an abundant supply of moist, fresh air at a temperature of 65 degrees to 68 degrees Fahrenheit. Memory, perception, disposition, health and happiness are promoted by good ventilation. Many evils result from poor ventilation. Vitiating, overheated, dry air is a contributing cause of colds, catarrh and various nose, throat and lung afflictions. It not only undermines the physical health but causes dullness, forgetfulness, inattention.

With the conditions of our school buildings such as they are it is necessary for all to coöperate to secure the best results. Even in the rooms where the best structural conditions prevail the teachers need to know what to do and how to act frequently, in order to secure for their pupils and for themselves an abundance of fresh air. Better teaching, better work by pupils and the essential conditions for good health are at stake in this matter.

Window ventilation is necessary in all our schools when the heating plants are not running as in September and October, and in April, May and June.

During the months when the heating plants are in operation the artificial ventilation should be supplemented by use of windows and doors and in some schools the dry air moistened by pans of water or by other devices.

SPECIFIC SUGGESTIONS.

Thoroughly ventilate all rooms and corridors by opening the windows and doors as follows:

1. At all recesses.
2. At close of each session.
3. During recreation exercises or games or physical training which involves standing or moving about.
4. Windows may be kept partially open when properly supplied with means of protecting pupils from direct draughts of air.
5. A suggested plan is to have all doors and windows opened for one to two minutes at a given signal from the principal, at 10 o'clock and 2 o'clock.

During this time pupils should stand and have a lesson in physical training and deep breathing.

Temperature—68 degrees Fahrenheit is believed to be the best degree. If proper humidity is maintained one or two degrees below 68 is better than one or two degrees above.

Humidity—Mean humidity of outside air is about 70 per cent. If the humidity in the school room is below 50 per cent. the air is not good. Water pans with large surfaces for evaporation should be used as needed.

Sanitation—In an effort to obtain proper sanitation in the schools the principal and teachers and janitor and medical inspectors must coöperate. The important work of the janitor can be helped on by the coöperation of the teachers. For example, since sweeping should not be done during school hours, teachers should arrange for vacating their room promptly, or should report to the janitor if for any reason it is necessary to use the room after dismissal of school.

Proper Seating of pupils should be secured by teachers and reports made to principals or superintendent if desks are not properly adjusted to pupils. Teachers should give temporary relief by allowing pupils to stand while reciting and by frequent recreation drills.

Teachers should emphasize correct habits of posture while writing, reading or reciting and should seek to avoid eye strain in reading from the blackboard. If the eyes are not normally from twelve to fifteen inches from the book while reading, the chances are that there is trouble with the eyes.

The children should be required to use soap and water freely on faces and hands, and they should be encouraged in habits of cleanliness in clothes and person.

Teachers should coöperate with the nurse in all her efforts for securing cleanliness.

Medical Inspection—The sheet for Principals and Medical Inspectors and School Nurse should be posted in the office of the Principal and known by all teachers as well as by Principals, since in order to increase efficiency in this work there must be team work.

1. Teachers should be alert to discover and to report to Principals on blanks provided for such cases before 10 o'clock on Mondays, Wednesdays and Fridays, all cases needing the attention of the nurse or the inspector.

They should coöperate with the nurse in following up cases and in all cases where school progress is affected by failure to secure the treatment recommended, they should persist in bringing the cases to the attention of the inspectors for the further study and to the attention of the Superintendent in the hope of securing action in the matter.

2. Medical inspectors know how to discover cases in pupils or in poor sanitary conditions of various kinds where the teacher may fail and they are expected to visit the schools as per schedule even if the teachers

have not discovered cases for treatment among their pupils. They are expected to secure right hygienic conditions for both pupils and teachers, since they speak with most authority upon any topic in the whole range of school hygiene. They should report upon the conditions as to sanitation, ventilation or any topic treated in this paper either favorably or unfavorably, from week to week, as well as upon the physical conditions of the pupils. Various blanks for such reports will be found at each principal's desk.

3. The nurse should report to the Superintendent of Schools at the beginning of each month the extent of her activities of the previous month and should leave with each principal each day the nature of her unfinished work, suggestions for teachers or for Medical Inspectors at their next call, etc.

4. All cases involving the protection of the health of others or progress in school studies or cases where it may be wise to have a council of any of the parties having the proper carrying out of the Medical Inspection in our schools, by whomsoever discovered, should be reported to the Superintendent of Schools through the office of the Principal of Schools. Blanks are provided in each Principal's office for that purpose.

5. Principals and School Nurse are asked to see that knowledge of conditions regarding pupils which should be known by the grade teacher, obtained in the Principal's office with medical inspectors or by the nurse in her rounds should be reported to the grade teacher.

It is hoped that by the united efforts along the lines suggested in this outline there may be greater efficiency in the physical basis of the work upon which so much depends for all mental progress.

Respectfully submitted,

EDWARD W. GOODENOUGH, *Chairman.*

WATERBURY, May 19, 1915.

(14) Report of the Committee on National Legislation, by Dr. Everett J. McKnight (Hartford):

REPORT OF THE COMMITTEE ON NATIONAL LEGISLATION.

Mr. President and Members of the House of Delegates:

The meeting in Chicago of the Council on Health and Public Instruction occurred March 15, 1915. Our anti-vaccination hearings came on the 17th and I felt that it was my duty to stay in Hartford, hence I did not attend to the matter. I would like

to call attention to some of the matters that were considered at that time. I want to read just a little of the chairman's address by Dr. Henry B. Favill of Chicago, who to me is a most wonderful man. He has done a great amount of good work and probably has done as much for the health of the United States as any man living. Dr. Favill said: "I want to call your attention to the fact that the purposes of the administrative forces in these departments of the American Medical Association are to be summed up under the general idea of forming and moulding, perhaps creating, public opinion, and public opinion with us, as with every great movement, must be regarded as fundamental to our enterprise. We have no authoritative American Medical Association policy. The American Medical Association has no autocratic powers. It has no hard and fast construction. It is a particularly mobile organization so far as concerns its definite achievements. Its relationship to the state organizations is one that is purely informal and advisory in character. Its relationship to the programme of the public is quite informal and advisory."

I will say that the matters taken up were greatly concerned with medical practice acts; state regulation of public health; suggested short law creating state board of health; a bill for an act entitled an act to create a state department of health and to provide generally for the maintenance of the public health and general welfare, etc., of the people of the state; a bill for an act entitled an act to provide for the regulation and supervision of all persons who treat any sickness, injury, etc., of any human being for compensation within the jurisdiction of the state. The programme was a little different from what I have heard before and I am sorry I was not able to go to the meeting.

THURSDAY MORNING, MAY 20, 1915.

The third meeting of the House of Delegates was held at 9.40 A. M., May 20, 1915, at the Hunt Memorial Building, Hartford. The President, Stephen J. Maher, was in the chair. The follow-

ing were present: Dr. Walter R. Steiner, Dr. William H. Carmalt, Dr. Patrick J. Cassidy, Dr. George N. Lawson (councilors), Dr. Paul P. Sweet, Dr. William R. Miller, Dr. Orrin A. Moser, Dr. William H. Crowley, Dr. Wilder Tileston, Dr. Walter S. Lay, Dr. George H. Jennings, Dr. Martin V. B. Dunham, Dr. Frank W. Stevens, Dr. Robert C. Paine, Dr. Cushman A. Sears, Dr. John E. Loveland, the President, Stephen J. Maher, and the Secretary, M. McR. Scarbrough.

The next order of business being the election of officers, the Secretary read a list of nominations of officers for the ensuing year, prepared by the Council, acting as a nominating committee (see pages 15 and 16).

There were no other nominations.

The following officers were elected:

President—Max Mailhouse, New Haven.

Vice-Presidents—Charles B. Graves, New London; Cushman A. Sears, Portland.

Secretary—M. McR. Scarbrough, New Haven.

Treasurer—Joseph H. Townsend, New Haven.

Committee on Scientific Work—Frank W. Stevens, Bridgeport; Wilder Tileston, New Haven; the Secretary.

Member of Committee on Medical Examinations and Medical Education—Charles A. Tuttle, New Haven.

Committee on Public Policy and Legislation—E. J. McKnight, C. J. Foote, R. W. Kimball, W. H. Donaldson, G. M. Burroughs, R. S. Goodwin, F. K. Hallock, Eli P. Flint.

Committee on Honorary Members and Degrees—William H. Carmalt, D. Chester Brown, Seldon B. Overlock.

THE PRESIDENT: Now we are ready for the discussion of Dr. McKnight's report (pages 33-41). Dr. Calef, who was here yesterday, was anxious to discuss it. He does not seem to be here this morning.

DR. MCKNIGHT: Dr. Calef feels that the charter of the Connecticut State Medical Society, given to it by the State of Connecticut, gave it a right to license physicians to practice medicine. That was true, and he feels that the Society still has that right and should retain it, and in his remarks before the

Committee on Judiciary, he cited a similar case in some other state where the Court upheld the right of the State Society to license practitioners. I feel that the fact that the State Legislature passed the Medical Practice Act and the Connecticut Medical Society and the other Societies accepted, that abrogates any rights that it previously had.

I would move you, sir, that a committee be appointed by the chair to investigate the matter to see if the Society has any rights in that particular, and also to recommend upon the advisability of trying to retain those rights and report to the House of Delegates a year from now, and then the matter could be settled.

It was voted that the Chairman of the Committee on Public Health and Legislation be empowered to get from the Attorney General of the State an opinion of the status of the Connecticut State Medical Society in the matter of licensing practitioners of medicine in the state, the report to be made at the next annual meeting of the Society.

THE PRESIDENT: The report of the Committee on Medical Inspection of Schools has not been disposed of. It is up for discussion.

DR. W. H. CARMALT (New Haven): It seems to me that the matter is of sufficient importance for this body, or for the State Society at least, to see if there can't be some uniformity of school inspection in harmony with that of the State Board of Education. I move that the Committee on Medical Inspection of Schools be authorized to confer with the State Committee on Education, and endeavor to arrive at a uniform system of school inspection and report at our next annual meeting, and we can see whether we can go a little farther with that after that; see if they can get at a common basis of action.

DR. JOSEPH H. TOWNSEND (New Haven): I will say, as a member of that committee, we have worked very hard for two legislatures in trying to get some legislation through, and we are very much disappointed at the results. There is a difference among those interested in medical inspection as to how it shall be carried out. In fact, there isn't a great deal of uniformity of opinion in our committee. Some believe it should be under

the control of the Board of Education, and others under the Board of Health. And even when we were up before the Committee on Legislation people interested in it were not agreed upon our bill; health officers throughout the State and also the school authorities; and then we had the opposition from the League of Medical Freedom, otherwise known as Christian Scientists, also the anti-vaccinationists and drugless healers, and it was uphill work. There are intelligent men who say that the law is drastic. In order to get a law that amounts to anything you have got to have it drastic. One senator said to me: "That bill allows the school physician to take my daughter and go through any kind of a physical examination on her; that would throw her into nervous prostration." I said, "Yes, it does, but no doctor who would be appointed as medical inspector would ever take any liberties with the girl." He said, "But they could do it," and I said, "Yes, they could, but they wouldn't." That's the kind of opposition you meet.

It was voted that the Committee on Medical Inspection of Schools be empowered to confer with the State Board of Education for the sake of arriving at some uniformity of medical inspection of schools of the State and further that our committee on medical inspection of schools be continued.

(16) Report of the Delegates to the American Medical Association, by Dr. D. Chester Brown (Danbury):

REPORT OF THE DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

Mr. President and Gentlemen of the House of Delegates:

The meeting of the American Medical Association, held at Atlantic City, was inaugurated by an address by the President, Victor C. Vaughn, that will become a classic. If by any chance any of you failed to hear it, and have not read it, let us commend it to you as well worth the time. It is found in full in the Journal of the Association, June 27, 1914. It was a sad reflection on the appreciative intelligence of our profession, that President

Vaughn felt that he had failed to reach his audience because they were restive at the length of the address.

Both of your representatives were appointed to committees that kept them very busy during the entire session of the House. It was particularly fitting that Dr. E. J. McKnight should have been appointed to the Reference Committee on Legislation and Political Action. It comes to one of your delegates from other members of this committee that his judgment and force were quickly recognized on this, one of the strongest committees in the House. Dr. D. Chester Brown was again appointed as Chairman of the Committee on Credentials.

In the Secretary's report reference is made to the establishment of a section on Gastro-enterology and Proctology. In 1913 the House endorsed the recommendation of the Committee on Sections and Section Work that such a section be established provided the Gastro-enterologic Society be abandoned and that the number of papers for the section be limited to fifteen. This the Gastro-enterologic Society did not feel like doing, and accordingly withdrew from the proposition. Many of the Fellows have felt for some time that they have wanted to have the privilege of presenting more than one paper or have been asked to present papers in more than one section. Under the present bylaws this can not be done. To overcome this it has been suggested that the sections be divided into general and special sections, and that a Fellow have the privilege of presenting a paper in either or both classes. A committee of five was appointed to take up and revise the whole question of sections and report to the House. It is incumbent on any Fellow who may have ideas that he wishes considered to communicate with this committee, of which Dr. Hugh Cabot, Boston, Mass., is chairman, and he may be sure that any such ideas will be welcomed.

The Secretary reported a communication from the American Institute of Homœopathy asking that a committee of five be appointed from the A. M. A. to confer with a like committee from the Institute to investigate the method of drug selection expressed by the formula *Similia Similibus Curentur*. As there is no mention of this matter made in the published proceedings of the House of Delegates in the Journal, it may be of interest

to you to hear some extracts from the communication. If this proposal is made in good faith our Association can not afford to ignore it. The three institutions suggested by the Institute were the Rockefeller, the McCormick of Chicago and the Evans Memorial of Boston. These institutions were communicated with but none of them signifies its willingness to take up that particular activity. The Secretary was instructed to so inform the committee from the Homœopathy Institute and ask that they suggest other laboratories or some practical plan for investigation.

The Board of Trustees reported a cash capital on January 1, 1914, of \$140,207, and that this is a very small amount for a business of nearly one half a million dollars a year. They advise raising this to a reserve of \$300,000, and urge upon the House that they adhere to a policy of economy until this is done. Their concluding remarks are worthy of quoting: "No other organization is doing as much altruistic work as is the American Medical Association at the present time, for 75 per cent. of the expenditure to which we have been referring is absolutely for altruistic purposes." In reporting adversely on the establishment of a Home for Widows and Orphans of Physicians the Judicial Council thus sums up the activities of the American Medical Association: "To raising the standards of Medical Education; to educating and enlightening the public on matters of public hygiene and public health; to disseminating weekly to the profession the active changes in the development of medical knowledge, as evidenced by the Journal; to the endeavor to protect the profession and public from medical frauds and to keep the standards of drugs and other agencies above reproach."

The Council on Medical Education reported a number of activities that were of particular interest. Among them was a consideration of advisability of State support for institutions for medical education. This was summed up as follows: We are every day coming nearer the time when in this country we shall see laws enacted to provide, by some state insurance scheme, medical care for the poor, as has been done for some years in Germany and has recently been done in England. If the profession in this country is far-sighted it will recognize these coming events and direct them wisely. This Council has now turned

its attention to the schools for graduate study in medicine and also advocates a single examining board for state license. Another idea that is endorsed by it is that all state boards shall require a year of hospital internship as there are enough hospitals of good standing in this country to supply every graduate in medicine a year of such training. It advocates that this shall be inaugurated for graduates of 1918 or 1919 and thereafter.

No branch of the American Medical Association has been more active in bringing out material that reaches the individual practitioner than the Council on Health and Public Instruction. It has taken up the problem of how best to influence public opinion relative to the establishment of a Bureau of Public Health in the National Government, and has come to this very sane and wise conclusion: First, we must get data to know whereof we speak, and then we may make such claims as are warranted. The Council has several plans under consideration and hopes before the end of this year to have some definite advice to give. This Council has a number of active committees working under it: a Press Bureau: Speakers' Bureau: Bureau of Literature, and in connection with this they have been able to bring out authoritative papers on such subjects as cancer research, contagious diseases, medico-legal pamphlets, sex hygiene. Any of these publications may be had by sending to the secretary. They are to-day the latest word on the subject. One striking demonstration of the value of an active national organization is brought out in the report of the Committee to Confer with the National Education Association. It is this: Country school children are more unhealthy than city school children. In this research it was found that whenever rural and urban statistics were compared, the country children were found to be from 5 to 20 per cent. more defective than city school children. This in spite of the slums and crowded areas of the cities and the supposedly beneficial conditions of the country.

The House of Delegates elected William L. Rodman to the presidency of the Association, and by a vote of 33 to 28 voted to meet in San Francisco, in spite of a contrary recommendation of the Committee on Meeting Place. A special train will be run under the management of McCann's Tours, and details of this

can be had from Wisner R. Townsend, at the Academy of Medicine in New York.

Respectfully submitted,

E. J. McKNIGHT,
D. CHESTER BROWN,
Delegates.

It was voted that the report of the delegates to the American Medical Association be accepted and referred to the Publication Committee.

DR. PATRICK J. CASSIDY (Norwich): At the request of the New London Medical Society, I wish to present the name of N. T. Smith, who, on account of ill health, is not in a condition to continue paying his dues. I move you that his dues be abated.

The motion was carried.

DR. WILLIAM R. MILLER (Southington): *Mr Chairman and Delegates:* I have a matter that I wish to bring before the House of Delegates that I believe would be of great importance to the profession of Connecticut as it has been to the profession of other states. That is the matter of legal defense against suits for malpractice. I find that there are twenty-four states in the Union that now protect all their members against suits for malpractice, and during the past year I have written all the twenty-four states and received replies from them giving very complete details as to what plan is followed, and the results and the costs, and all data in connection with this. It would seem from their replies, which are all very enthusiastic, that the Connecticut State Medical Society should adopt something similar for its members. This information that I obtained was incorporated in a paper that I read before the Hartford County Medical Society about a month ago, and many of the members seemed to think that it was of sufficient importance to present to the State Society, inasmuch as it was particularly a state function, not a county function, to protect their members; also, in fact, it originated in some of the western counties, and later was made a state affair. I think the cost is a thing that is usually first thought of in connection with anything of this kind as we naturally expect and think that suits for malpractice are expen-

sive affairs, but it has not proven so. In all of the States of the Union the cost per member annually has been less than one dollar per year. The results that they obtained seem to me remarkable. I would like to just give you the result as far as I was able to tabulate them from the replies I received.

From the twenty-one states reporting this item, 779 cases have been tried and but ten lost. Approximately but one adverse decision in eighty cases passing through the court. Of course this is the number of cases which actually came to trial. The number of cases which did not come to trial of course is not known, because many cases are settled by the physicians themselves, without bringing them before the Medico-Legal Committee; but it is estimated that the State Societies themselves settle, or at least throw out of court or prevent coming to trial, eighty per cent of all cases that come before them. And this does not mean that they pay any damages. They simply, by protecting the physician, put up such a stiff fight that the case is dropped. That is one of the strong features of medical defense by the State Societies that no cases are settled, every case is fought and appealed if necessary. If the case is lost it is appealed to the highest court in the land, and because of this the lawyers are much more careful about bringing suit and are very sure of their grounds of action before proceeding to carry the cases to court.

The New York State Medical Society has defended 147 cases in the last twelve years without the loss of a case. Iowa has defended 54 in the last seven years without a loss; and Michigan 125 during the last six years with but one adverse verdict.

Twelve states in combination have defended 612 suits and not a single verdict against a single physician was obtained.

The cost to members of the twenty-four state societies averages less than a dollar per year per member. Most states have found this sum sufficient and many have accumulated sums varying from three to twelve hundred dollars.

Massachusetts has defended fourteen cases in the last six years at an average of cost of \$325.00 a year, and the average cost in all cases where the figures were given was \$25.00 a case.

The plan followed by the various states is similar and it usually consists of having a medico-legal committee of three or more who have charge of this work. In cases of threatened suit the member who is threatened puts all the data in connection with the suit before the counsellor of the society of which he is a member. The counsellor investigates his standing, whether all dues are paid, and investigates the case and reports to his committee as to his standing and on the advisability of defending the suit. As a matter of fact all states defend practically all suits if a member is in good standing.

I don't know that there is anything further to bring before you except that I could read many of the letters, but I don't think it is necessary. They are all enthusiastic, I have all the data that they have sent me and it is my suggestion that a committee of three be appointed to give over these data and make a report to the Connecticut State Society, perhaps at some future date, and that this committee be given the power to suggest such change in our by-laws as might be necessary to give us the advantage of this feature of medical defense.

It was voted that a committee of three be appointed by the President to investigate the advisability of the State of Connecticut adopting medico-legal defense, and report at some future meeting, with power to suggest changes in our by-laws that will cover this feature.

The President appointed to this committee, Dr. William R. Miller, Dr. Everett J. McKnight and Dr. Frank H. Wheeler.

DR. GEORGE N. LAWSON (Middle Haddam): In accordance with the recommendation of the Council, I move that the dues for the coming year be the same as this year, namely, three dollars.

The motion was seconded and carried.

DR. WALTER R. STEINER (Hartford): I move that the next annual meeting of this Society be held on the third Wednesday and Thursday of May, 1916, at Bridgeport, Conn.

The motion was seconded and carried.

It was voted that the next semi-annual meeting be held in conjunction with the Middlesex County Medical Society.

The following letter from Dr. N. P. Colwell, Secretary of the Council on Medical Education, was read:

DR. M. M. SCARBROUGH,
Secretary, Connecticut State Medical Society,
New Haven, Conn.

DEAR DOCTOR SCARBROUGH:

In an effort to secure a reliable list of hospitals which may be considered acceptable from the standpoint of furnishing a satisfactory training for internes, our Council has appointed in each State a committee of three to act in an advisory capacity. On these committees we have, so far as possible, secured representatives of (1) the state medical association; (2) the state licensing board; and (3) a high-grade medical school (where there is one in the State). The committee which has been selected for Connecticut is as follows: Dr. George Blumer, chairman; Drs. Charles A. Tuttle and Walter R. Steiner, members.

Would it not be an excellent plan for your state medical society to take action endorsing this committee and in that way be in position to obtain from the committee an official report regarding the hospital situation in Connecticut? An endorsement of the committee and its work by your society would give added weight to such lists as are prepared.

Awaiting with interest your reply, we are

Very truly yours,

COUNCIL ON MEDICAL EDUCATION,
Per N. P. COLWELL, *Secretary*.

It was voted that the action suggested in the letter from Dr. Colwell be endorsed and that the committee designated be appointed and also instructed to report to the House of Delegates at the next annual meeting.

The Secretary presented a communication from the American Medical Association, suggesting the appointment of Dr. George H. Warner of Bridgeport to the Committee on Public Health Education on account of Warner's active interest in the prevention of ophthalmia neonatorum.

It was voted that Dr. George H. Warner of Bridgeport be added to the Committee on Public Health Education.

On motion by Dr. G. N. Lawson it was voted that all special committees be continued, and that the President of the Society be authorized to fill any vacancies that may occur.

Adjourned *sine die* at 10.30 A. M.

OLIVER COTTON SMITH

MEMORIAL DINNER

HARTFORD CLUB

Thursday, May 20, 1915

Memorial Address.*

DR. EDWARD T. BRADSTREET.

We almost painfully feel the uniqueness of this occasion. Although it is expressive of many happenings of our lives in which there is a mingling of the bitter and the sweet, sadness and joy, it will always remain in our minds distinct from all other occasions, more because of what will be felt and not spoken, than from anything I may say.

It is no reflection on the loved and famous men who have passed on from this Society in previous years that we now make this unusual pause. The fact that the one we mourn, and also celebrate, was our president has something to do with it, but not very much. This event, which is more a ceremony than a dinner, is only another demonstration of what we felt compelled to express. There is no way in which we could have fully shown our recognition of the worth and grandeur of the life of O. C. Smith. A grandeur that was over-matched only by the manner of its close.

We have many times contemplated and discussed the change death means—seldom has the parting of the ways given us so much thought.

Life has many aspects. As many as our changing moods. One may hear the wail of the centuries made up of curses of hate, the shrieks of pain and anguish, and the moans of the dying, or he may listen to the sweet singers of all the ages. One may allow his mind to dwell on the cruelty and hate, the lust, envy and avarice that so largely make the reeking record of our race, or he may keep his thoughts on the noble deeds and the redeeming love that also marks our progress. One may choose the bogs and slimy things, or the high places where the air is pure and flowers blossom.

* Delivered at the Oliver Cotton Smith Memorial Dinner, held at the Hartford Club, Thursday evening, May 20, 1915.

It is difficult to imagine O. C. Smith following any profession but the one he chose. We are sure he would have graced any; that he would have tested its capacity for usefulness, and that he would have been the same clean, clear and high-thinking man.

While we pay tribute to his memory for having, by his learning and skill, and by his noble personality, elevated the entire medical profession of the State, we also may congratulate ourselves on belonging to a profession that afforded him his opportunity and scope. Between the evil and the good—between lust and hate and their victims—between disease and health, and sometimes between death and life, our profession, more and more, represents the shield and bulwark. Every duelist had his surgeon. Every army has its medical staff. When there are enough of us of the type of O. C. Smith, society will demand that we have entire control of those unfit to be at the front.

It is not for me to measure the surgical skill of Dr. Smith, nor to estimate the ripened logic of his busy and unhurt mind. We were proud of his skill and the conclusions of his reasoning satisfied us.

You skilled and competent men will not be offended if I say that many "family-physicians"—the humble general practitioners of the State—feel deserted. It seems to us no one can quite fill his place. If any of you young men can measure up to the foot of the throne upon which we had placed him it will be high honor. But when we heard, as we knew we would hear, that O. C. Smith had passed from earth, not one of us thought most of the loss of his skill and advice. We felt bereft of a friend. We felt there had gone from earth a personality so strong, so permeating and of such an influence that it is difficult for me not to compare him with One I must not.

The most important field of activity of a surgeon is the hospital—with all their failings I have arrived at the belief that hospitals are the most sacred of places, and the most typical of what Christianity started out to be.

The accessories of religion are not very important in a hospital. There the man or woman with the message on the face

is recognized, whether enhanced by garb or not. The one we proclaim had the message. "He had seen the Vision." I doubt if in recent times anyone came from under the influence of a personality with such a glow of heart, such an uplifted sense of what life means, as those who suffered some crucial experience at the hand of O. C. Smith and afterward received the benediction of his sustaining presence.

It is more pleasing to contemplate a finished structure than to analyze its construction. But inasmuch as our lives are still building it may behoove us to consider some of the methods by which O. C. Smith came to be so successful an architect in the forming of his life. It is interesting to study any human character and to try and guess the reason of achievement and limitation. All we may now do is to mention a few features of this master-life that we have seen develop, ripen and pass on.

One trait we all have noted was his hearty appreciation of those working with him. A term he used two or three times in his latest writings was "Generous Coöperation." That phrase almost portrays the man. He gave and received generous coöperation not only with his colleagues but with his patients. His generous nature led him to use praise very freely. Many of the results he obtained were due to this quickly-absorbed and long-retained tonic. I fear most of us are not big enough to use this potent agent. It is interesting to consider what one will do to live up to praise bestowed by one who has the right to give it.

A fine sense of proportion characterized our friend. His engaging manner, his wonderful charm and his popularity were largely due to his sense of proportion. This quality gave him his regard for the worm that would escape his foot and also his attitude toward his Maker, and all between that touched his life. He enjoyed seeing others advance and seemed devoid of self-seeking but was very appreciative of honors bestowed upon him. He was able to keep his mind occupied with sweet and ennobling thoughts. While his daily work was with disease, his real life seemed to be more absorbed with the beautiful.

While his feet stood firmly on the ground, his soul was apt to be with what poets see. He loved comradeship, music, his little granddaughter and the roses.

It would be hard to find anything more assuring that this world may, and ought to be, a good old world to journey through, than can be found in the way he kept his poise.

The unusual circumstance of this dinner gives me the right to speak of what you and I consider should be lived rather than discussed—religion. O. C. Smith could not have lived the last five years of his life as he lived it had he not been buttressed by something above our humanity. I doubt if very many, any more than I did, ever thought to inquire where he received his spiritual training, nor where he would have sought a place to conform to the formalities organized religion offers. As I knew the man his life was a prayer and many a place a place of worship. It would not have been possible for him to have rounded out his superb life had he not "walked daily with his God," nor to have made such a triumphant and awe-inspiring finish of the race had he not had acquaintance with Him who had been in the Garden of Gethsemane.

It does not satisfy me to reflect that only the influence of this life of which we are so proud will go on, or that the world gained much by his having passed through it.

I would not want a mind that could think of O. C. Smith dead. This man whom I loved and for whom I had almost worshipful regard still exists. "He fell asleep, 'and after sleep there is an awakening.'"

With all our bravery of thought we would not be quite honest if we did not let our hearts speak out. In spite of our treasured memories, in spite of the glorious inheritance of an example to follow, our hearts feel bruised. We have suffered a loss that we must confess is irreparable. We miss our friend. While we thank God for the privilege of having shared the friendship of such a man it is hard to think he has gone away.

With all confidence that it is all right with him and that we shall meet him again we wish the curtain could be drawn back a little.

“Ah Christ! were it but possible
For one short hour to see
The souls of those we loved
That they might tell us
What and where they be.”

“There be of them that have left a name behind them.” Let
me ask you to rise:

With thankful hearts for the memories he has left;
As a pledge that we will more earnestly endeavor
To follow the example of his life,
And with the hope of meeting him in The Great Beyond,
I ask you to drink a toast to the name,

OLIVER C. SMITH.

PRESIDENT'S ADDRESS.

President's Address.

The Bacterial Flora of Trees and Men.

STEPHEN J. MAHER, M.D., NEW HAVEN.

In the hope of making my subject interesting, I have taken advantage of the fact that the maker of the annual address in medicine is allowed some privileges of speculation and of order of statement that would not be desirable in strictly scientific discussion. Nevertheless, no deductions herein recorded are without bases of experimental support.

For the purpose of keeping the motif and nomenclature of this address clear and uninvolved, I wish you to consider all bacterial life as divided into spore-bearing bacilli, non-spore-bearing bacilli, cocci, and a fourth class to include yeasts, molds and the higher forms. As to this fourth class I will have very little to say to-day.

In the test tube when a spore-bearing bacillus reaches the limit of its power of vegetative growth, either because it has covered the surface of the hard medium on which it has been planted, or because it has produced a sufficient amount of toxins in liquid media to inhibit its further development, each little rod transforms itself into ovoidal or round shapes sometimes thicker than the original rods and sometimes less thick. These shapes, the spores, are the resting stage of the bacillus. They undergo no further change as they grow older except that they thicken their outer capsule, and thus become somewhat more resistant to such harmful influences as heat and acid. Of course as soon as they are transplanted to a favorable environment they grow again into rod shapes and multiply as rods.

In nature when the spore-bearing bacillus finds its life threatened by cold or by starvation, or by poisoning from its own secretions, it becomes a spore or two spores. When its environment is merely difficult, not threatening, the bacillus lengthens out into filaments or develops internal cocal granules.

The only spore-bearing bacilli that cause disease are the bacillus of anthrax and the bacillus of tetanus and the gas bacillus. Con-

siderable attention has been everywhere paid to these three spore-bearing bacilli as well as to cocci and yeasts and non-spore-bearing bacilli, because they so frequently produce disease. But the harmless spore-bearing bacilli that we often drink with our milk and that we always eat with our salad, have received very scant attention indeed from medical text-books, or medical teachers, or medical research workers. The argument for neglecting them is that no disease comes from them. My argument for the need of studying them is, that all germs that cause disease come from them. That is a pretty strong statement, but I hope to be able to stagger your incredulity without bewildering you with too many technical details. And if I succeed in convincing you, or even interesting you, I will give you a new power maybe, for grappling with many of the difficult problems of medicine and hygiene.

WHERE SPORE-BEARERS EXIST ALONE.

For the purpose of this address it is important to learn if there are places in nature where only spore-bearing bacilli grow. While on a mid-winter visit to a friend in the Adirondack Mountains some years ago, he and I debated the question, is there any bacterial life in this cold mountain air? My friend's view and the belief of all the scientific men thereabouts was that this glorious dry air, 10° to 50° below zero, was germ free. To decide the matter we made many interesting experiments during the next week with the following results:

Spore-bearing bacilli in pure cultures grew on all petri plates of agar exposed out of doors before snowfalls, during snowfalls, or after snowfalls. Spore-bearing bacilli, pure except for an occasional mould from the thicker twigs, grew from the foliage of all the evergreen trees in the mountain forest, whether near to the village or distant. Of course all the technique of getting the leaves was as careful as alcohol lamps, sterile jars, and freshly flamed instruments could make it.

I have repeatedly exposed agar plates to outdoor air in New Haven in winter and in summer. After rain storms in summer

and after snow storms in winter, and sometimes during snow storms in winter, the incubated plates have yielded only colonies of spore-bearing bacilli. At all other times outdoors, and at all times indoors, the colonies of spore-bearing bacilli have been mixed with colonies of various kinds of cocci, non-spore-bearing bacilli, and moulds. Plantings of blades of grass have invariably given me only pure cultures of spore-bearing bacilli, provided the blades were secured a few yards from the road.

At my request, Dr. P. M. Carrington of the United States Public Health Service sent to me from Fort Stanton, New Mexico, a splendid assortment of the foliage of the grasses and stunted trees that grow with some difficulty on the dry plateau on which the national reservation is situated. The collection included specimens of alfalfa, loco-weed, scrub oak, cedar, salt-grass, blue-grass, blue gramma-grass, cottonwood and holly. The specimens were gathered with sterile instruments and expressed to me in sterile sealed tubes. From all of the grasses and foliage, only spore-bearing bacilli grew. From the roots of several of the grasses to which bits of soil adhered, colonies of cocci grew in greater numbers than colonies of spore-bearing bacilli. Plantings of various kinds of sea grasses growing on the shores of both sides of Long Island Sound, gave only spore-bearing bacilli if the specimens were gathered from clean rocks or sand, and gave admixtures of coccal colonies if the specimens came from plants that were muddied or that were submerged at high tide. Some beautiful specimens, gathered on the Long Island shore at a spot where they grew always under water on a clean white beach, gave only pure cultures of spore-bearing bacilli.

WHERE SPORE-BEARING BACILLI ARE NOT FOUND.

For the purpose of my argument it is also important to know whether there are places in nature entirely free of spore-bearing bacilli. I intend to claim now that there are such places. Of course, I admit immediately that in most places of the earth there is a mixture of spore-bearing bacilli and the other forms of bacterial life. These mixtures occur in the soil, in water, in

all decaying vegetable matter, in milk and other exposed albuminous or sweet fluids, in street dust and in house dust.

Where, then, are they not found? During the past twenty years I have examined, microscopically, many thousand specimens of human sputum. Except in the cases of a few patients who were sleeping out of doors among pines and firs in the coldest week of an Adirondack winter, I have never found spores in a specimen of sputum. Strange to say—and important to note—in one batch of specimens raised by these pine-wood patients after the coldest night of the year, when the temperature had been between 40° and 50° below zero, I was able to grow from two specimens, a spore-bearing bacillus of the same general character as the spore-bearing bacillus that grew from the green needles on the neighboring trees. And, occasionally, in cases of chronic bronchitis I have grown from the sputum a large yeastoid bacillus, having many of the cultural characteristics of *Bacillus anthracis*. I have never seen a case of “wool-sorter’s disease.” Of course, in that disease, *Bacillus anthracis* is found in the air passages. But with these exceptions, I have never seen a spore in human sputum, tuberculous or not, and, in spite of many hundreds of cultures made from all kinds of human sputum, I have never been able to grow from sputum, spore-bearing bacilli in any kind of culture media, solid or fluid.

My experience, therefore, and it has been considerable, seems to justify me in saying that spore-bearing bacilli are not found in the healthy human air passages, and only very, very exceptionally found in diseased air passages.

NO SPORE-BEARING BACILLI ON HEALTHY HUMAN SKIN.

During the last fifteen years I have had occasion to make bacterial cultures from various parts of the body, from all sorts of people. I have never been able to find a spore-bearing bacillus on the surface of the skin nor to grow any spore-bearers from the skin, from cerumen, from smegma, from the oral or nasal mucous membrane, nor—and I say this with hesitation—nor from the human hair. In the food tract, however, the spore-

bearers persist, and they can be easily grown from the contents of the bowels.

The facility with which cultures of cocci can be made from the skin and the mucous membranes of the upper air passages, and from sputum and from purulent discharges of all kinds, makes this absence of all spore-bearing bacilli from the human skin worthy of attention. Certainly every wind that blows, whether dust-laden or not, sprinkles the human skin with spore-bearing bacilli. What happens to these hardiest of bacteria that are continually deposited on the human skin? Of course, bacterial forms, other than cocci, are found on the human skin and in human sputum, in health and in disease, but even they fit readily into the theory that they came originally from the spore-bearing bacilli. These are the diphtheroid and the acid-fast bacilli that are found in smegma and cerumen, in the accumulated oily sweat of arm-pits and groins, and in ozonal crusts. They are evidently transition forms; they do not preserve their acid-fast character, and frequently not their bacillary form, on subculture. Very instructive also are the bacteria I have found in severe cases of chronic psoriasis. Some of them were perfectly acid-fast and resembled thick granular tubercle bacilli, but like some of the growths in smegma, they varied in acid resistance. Some of the rods had none at all, and mixed with them were cocci of the same size and staining as the coccal granules in the bacilli. Attempts at culturing these psoriasis bacteria resulted only in growths of cocci.

Now it was only at last year's meeting of this society that I exhibited pure cultures of acid-fast bacilli simulating tubercle bacilli, that I developed from old acid-fast spores of the hay bacillus—*Bacillus subtilis*. And in the hair the bacteria that I have found have been diphtheroid bacilli and cocci, sometimes in short chains.

Of course, I don't even insinuate that the partly acid-fast bacilli cause psoriasis any more than I would claim that smegma bacilli cause smegma, or that the acid-fasts of the oily secretion of an axilla caused the oily secretion. The simple explanation is that the cells of the skin, though increasing in number, were so

weakened with disease that they could not finish the breaking up of the bacilli or their spores, and the bacilli and spores therefore grew on the skin in this transitional form.

That the smegma bacillus may have an importance not usually ascribed to it, I have indicated in a little paper published by the *Lancet* in November, 1913, in which I told of a case of pulmonary tuberculosis following an infection by smegma bacilli. The histories of women patients at the State tuberculosis sanatoria reveal a surprisingly large number of cases of consumption, whose first symptoms were in the uterus, tubes, or ovaries.

I have noted that it is with hesitation that I speak of the human hair as being free from spore-bearing bacilli. I can only say that such has been the result of my experiments, but my experiments have been too few and have been mostly with tuberculous patients, and I do not feel that I have the same right to speak with certainty on this matter as I have concerning the flora of the air passages and the skin. But even if further experiment only shows that very rarely are spore-bearing bacilli found in the hair, what a tremendous digesting or transforming power the hair must have! And the cells of the intact human skin, and the mucous membrane of the air passages, do they digest or transform the spore-bearing bacilli? Or are the cocci that abound on skin the result of an action similar to Pfeiffer's reaction in which cholera vibrios and typhoid bacilli are transformed into coccal forms in the peritoneal fluid of injected guinea pigs?

CAN BACTERIA CHANGE FORM?

Because this is an annual address and is therefore protected from the critical discussion that perhaps many of my hearers feel it deserves, I will abstain from going deeply into this fascinating subject of the varying morphology of bacteria. But at least I may refer to my papers on this subject before the International Tuberculosis Conferences of Philadelphia, Brussels (*Medical Record*, Nov. 12, 1910), and Berlin (*Medical Record*, Dec. 27, 1913), in which I tell (1) of breaking up spores of the *subtilis* into cocci by culturing them in various strengths of salt

water, and (2) of forcing even tubercle bacilli to elongate, become granular, and finally extrude these granules as culturable cocci.

I must be permitted also to refer to Much's demonstration of a coccal prebacillary form of the tubercle bacillus, to Noguchi's, making bacillus bifidus alternately spore-bearing and non-spore-bearing by changing its cultural environment. Of course, it is very remarkable to note the fixed characters that so many of the bacterial cultures in our laboratories preserve, and it is pleasant and restful to think that in nature they also always retain these characters, but the conditions in the laboratory test tube and the conditions in nature are widely different. In the test tube the bacillus grows within a carefully regulated temperature range on a specially favored medium from which all other bacterial life has been rigidly excluded. In nature, it is needless to say, these conditions are impossible to find. Every breeze that blows makes a hopeless mixing of the bacterial forms within its reach, and changes the gaseous environment even of those forms that it does not move.

IS THE SUBJECT IMPORTANT?

Perhaps you feel like asking, where does all this lead to? What difference does it make to the Connecticut Medical Society whether or not the harmless spore-bearing bacillus is the only form of bacterial life in the clean places of the earth? What difference does it make to us that there are to be found no innocent spore-bearing bacilli on our skin or in our lungs? What difference does it make to us whether the spore-bearing bacilli that we inhale, or that fall on our skin, die of fright and melt away, or are broken up into cocci by our defensive epithelium? What difference does it make to us whether smegma bacilli come from *Bacillus subtilis* or not; or whether smegma bacilli may become pathogenic, and after some period of incubation in the cells of the human being, acquire the power to cause tuberculosis in the lungs or elsewhere?

Well, you will find your own answer to some of these questions if you take stock for a moment of what your present bacterial faith is. Is it not this? "The unicellular vegetable organisms called bacteria consist of many thousands of species, some harmless to man and some harmful. These species, like the species of fish that swim in the sea, are distinct in character and origin. The staphylococcus must have come from another staphylococcus, the streptococcus from another streptococcus, the diphtheria bacillus from another diphtheria bacillus, the plague bacillus from another plague bacillus, the tubercle bacillus from another tubercle bacillus, and so on to the end."

It is on this conception of the origin of bacteria that all modern hygienic efforts are based. It is because of this conception of bacterial life that so many enthusiastic tuberculosis workers promise, by segregation, to rid their communities of the disease within a specified number of years, sometimes ten, sometimes fifty. But what becomes of your old faith if the innocent *Bacillus subtilis* may on greasy human skin become the harmless smegma bacillus, and if the harmless smegma bacillus may learn to live in human cells and later to destroy them and cause tuberculosis?

How false is the hope you give to the public about eradicating tuberculosis if you bend all your energies and theirs toward isolating the sick. Of course, the most stupid fruit dealer knows that he must remove the spoiled apples in a barrel in order to save the others. But the real apple problem, as our Mr. Hale and the other scientific orchardists have shown, is to learn how to grow and market all our apples sound.

Ten years ago, when I began to claim that by changing the degree of saltiness or sugariness of culture media I could profoundly alter the characteristics of various bacteria, it was difficult to get a hearing, but now no such difficulty is encountered. The general principle is accepted and forms the incentive of research work everywhere. To-day, however, I want to keep your attention fixed on conditions that exist in nature, not on those of the laboratory. And to return to the problem of the disappearance of spore-bearing bacilli from the human skin, it ought in fairness to be said that the text-book explanation of

this disappearance would be that as the spore-bearing bacilli did not find a suitable environment on the skin or in the throat or lungs, they died promptly and vanished. This explanation will not hold because spore-bearing bacilli are the most resistant germs of which we have knowledge, and because if they die, they could not vanish unless you attribute a tremendous digestive power to the superficial epithelial cells. And if you concede such a faculty to these cells, you make simple the other explanation that these cells dissolve the shell of the spore-bearing bacilli and release as cocci their contained vital granules.

If this possibility be granted, it makes doubly interesting the recent researches showing that tuberculosis is a family disease. The tubercle bacillus is very sensitive to its environment. I have some strains that formerly grew well on glycerin-agar and on blood serum, but after growing luxuriantly for one or more years on glycerin-broth-potato, they cannot now be induced to grow in their former favorite media of glycerin-agar or blood serum. It is easy to understand, therefore, that the tubercle bacilli that have been evolved from smegma bacilli in a father or mother after long struggles with the weakening lytic power of that father's or mother's cells, would be much more dangerous to the children of that father or mother than to the children of any other father or mother, even though living in the same intimacy.

Such a theory would also explain the surprising immunity of so many husbands and wives of consumptives. At the New England Conference on Tuberculosis last October I asked whether any of the distinguished authorities present knew of a case in which they had been convinced from personal investigation that a negro man or woman had taken tuberculosis from a white man or woman; or of a case of a white man or woman that had taken tuberculosis from a negro man or woman; or of a case in which a parent had taken tuberculosis from its young child. There was considerable surprise at the asking of the question, but there were no affirmative answers. I don't say that such cases may not occur, but I know of none and I think they must be very rare.

THE ORIGIN OF THE PNEUMOCOCCUS.

Let us go back to the always-present cocci of the skin and air passages: if they are derived from the harmless spore-bearing bacilli of the air and leaves, is it not easy to understand why they are harmless on the intact skin, but become harmful when they have lived for a few generations, or seventy-two hours, in the broken cells and effused blood of an injured arm or leg? And does not this conception afford a new and inviting lead into the mysterious problem of pneumonia—traumatic pneumonia, epidemic pneumonia, and tuberculous pneumonia? For what is the cause of pneumonia? It's usually a coccus that is found frequently in the mouth vegetating harmlessly, but that from the beginning to the end of cold weather is our most dangerous foe.

In warm weather, the atmospheric conditions are so favorable that the spore-bearing bacillus grows readily in nature in its bacillary form, and when taken into the air passages, it is easily and quickly broken into its coccal granules. These resulting cocci inherit from their mother rod only a very thin shell which is easily dissolved by the cells and fluids of the air passages. They are incapable of penetrating even the weakest epithelium. In summer men have injuries to the chest; they get chilled in the water of the river or ocean, but unless they are very old or have tuberculosis, they seldom have pneumonia.

Now what happens in winter in the pneumonia months? The spore-bearing bacilli of the street dust and even of the bare trees have long ago lost their vegetative bacillary form and have all turned to spores, and the capsules of these spores have become thicker and more resistant and often acid-fast. When the snow is on them, no matter how cold the weather is, there is little pneumonia in the community, but if the streets and the fields are bare and the weather cold, and the winds high, in other words if it is a green Christmas, the hardy spores of *subtilis* or some of its kindred spore-bearers are inhaled with every breath by young and old. The cells and secretions of the air passages break up the spores as they did the rods in the summer, but the resulting cocci inherit now a thick capsule like the shell of the tubercle

bacillus, and this is not easily dissolved even by the most vigorous epithelium. And in the weak and the aged and even in the young and strong who have by exposure, or by over-eating, or over-drinking, or excesses of any kind, caused a little congestion of the blood vessels of the air passages, these capsuled cocci gain access to the circulation and in a few hours there is another case of pneumonia.

In tuberculous pneumonia the development of the acute process may be explained in the same way except that the pneumococcus could come from the disintegrating tubercle bacillus. A few winters ago I had a very severe epidemic of pneumonia in the Home for the Aged in New Haven. Every day for a couple of weeks, on the women's side of the institution, one or two new cases of pneumonia broke out. And the cases were very severe. And all this while there were no cases of pneumonia on the men's side of the institution. At about the tenth day, I discovered that one fussy old lady, who coughed but said she was not sick, had a chronic tuberculous process of the lungs. It was against the rule of the institution to harbor tuberculous patients. She was isolated and, after a few days, sent home. Not another case of pneumonia occurred. We found then that all the first cases were the women who were her chums, or who sat with her at table, or who slept beside her in the dormitory. Her sputum injected into a rabbit killed it promptly and filled its blood with pneumococci. She herself died in a few weeks rather suddenly.

A TREE AND A MAN.

In conclusion, in order to visualize quickly some of the points I have tried to make in this address, imagine what would happen to a young germ-free man and a young germ-free tree suddenly placed on the germ-free soil of a mountain top. The winds from the neighboring mountains or valleys would sprinkle both the man and the tree with spore-bearing bacilli. On the tree these spore-bearing bacilli would continue to grow as spore-bearing bacilli. On the skin of the man they would be promptly changed to cocci. Both tree and man would thrive. The leaves that fell

to the ground would die. Their spore-bearing bacilli would at first become spores. As the leaves accumulated the tendency to spore formation would slacken and soon, in the moist centers of the heaps of leaves, only granular, non-spore-bearing bacilli would be found. As the leaves were ground into the soil, and the conflict between the tendency to spore formation and the tendency to normal vegetation became acute, the leaves would give off to the soil various kinds of cocci, and in places where the soggy earth covered some of the leaves and prevented access of air, some of the bacilli would be found that grew as rods but with unripe spores at one end. These would be dangerous for the man, for they would be the bacilli of tetanus. But like all the other derivatives of the original spore-bearing bacilli, they would be of benefit to the soil of the mountain top.

On the man the coccal forms would help in the exfoliation of the dead cells of his skin and mucous surfaces. They would pass into his food tract, produce acid, and assist in breaking up difficult food in his intestines. If the young man took no care to remove from his skin the matter that gathered there as the result of perspiration, there would appear on many parts of his skin, particularly on those parts where the exudation was heaviest and most oily, an addition to the always-present cocci, many short granular rods of which a certain proportion would be acid-fast, and would look like tubercle bacilli.

PAPERS ON SPECIAL
SUBJECTS.

Separation of the Epiphysis of the Upper End of the Femur.

With Notes on the Treatment of Fracture of the Hip in Adults.

GEORGE W. HAWLEY, M.D., BRIDGEPORT.

Complete separation of the superior femoral epiphysis is not only an uncommon injury, but also one that is not often recognized early. This is accounted for by the fact that fractures through the neck, or the epiphysis in young subjects, do not, as a rule, cause the disability which is usually associated with fractures.

The literature on this subject is somewhat incomplete. In Scudder's¹ work on fractures, the text contains no reference to separation of the upper epiphysis of the femur, although roentgenograms of a case reported by Mumford are shown. Cotton² devotes several paragraphs to this injury, remarking that it is relatively, but only relatively, rare, but no mention is made of any cases. Stimson³, on the other hand, states that separation of this epiphysis has been demonstrated by specimen in a few cases and suspected in a number of others, but that there is reason to believe that it is even rarer than fracture of the neck at the same age. He then describes eight cases collected from the literature.

The most complete description has been furnished by Whitman⁴, based on eleven cases which came under his observation

¹ The Treatment of Fractures. Chas. L. Scudder, M.D., VII Edition, 1914.

² Dislocations and Joint Fractures. Frederick J. Cotton, M.D., 1910.

³ A Practical Treatise on Fractures and Dislocations. Lewis A. Stimson, M.D., VI Edition, 1910.

⁴ Further Observations on Injuries of the Neck of the Femur in Early Life, with Reference to the Distinction between Fracture of the Neck and Epiphyseal Disjunction, as Influency Treatment. Medical Record, January, 1909.

at the Hospital for Ruptured and Crippled during a period of ten years. These cases are reported in full and supply two interesting observations. One has to do with the matter of the age of these patients, and the other with interval between the time of the injury and the beginning of treatment. The youngest subject was thirteen years of age, and the oldest sixteen. Most of the cases were seen one month to one year after injury, the earliest case being three weeks. Practically all were late cases, and reduction was accomplished by open operation in nine out of the eleven. In one case only was reduction obtained by manipulation.

The following case is of interest, because complete fracture was secondary to a partial separation five months earlier, because the displacement was recognized and reduced early, and because both the anatomic and functional results have been perfect.

G. J., a tall, well-built boy of 15, received a slight injury to the left hip in November, 1913, during a football scrimmage. He resumed play and gave it no further attention. A week later he fell, while dancing with his sister, in such a way that the weight of her body came on his left hip with the leg in the abducted position. He suffered sharp pain in the hip, but arose and walked after a short rest. Following this he developed a slight limp, and certain motions caused pain. These symptoms continued and four weeks later I was requested to see the boy in consultation. At that time he walked with the leg abducted. There was free motion at the hip in all directions, except adduction, and internal rotation. Flexion took place in the abducted plane. Measurements were alike on both sides. Roentgenographic examination was made, but little appreciable difference in the two hips was observed, although a note was made at the time that the epiphyseal line on the left side was apparently wider than on the right (Fig. 1), but this evidence was considered insufficient and no definite diagnosis was made. Complete rest for two weeks was advised. He was then allowed up and cautioned to limit his exercise to walking. Restriction to adduction and rotation had disappeared, and within a short time there were no signs of lameness, except when he ran.

In April, 1914, he fell heavily on his side while experimenting with crutches, and was carried to bed suffering greatly. The pain was referred to the upper and outer side of the left thigh, and the only point of tenderness was over the shaft of the femur in the upper third. The leg lay in adduction and extreme outward rotation. There was one inch shortening. Motion was impossible because of the pain. The limb

was temporarily immobilized and roentgenograms were made the next day. These showed very clearly a complete fracture through the epiphysis with displacement (Fig. 2). The following day reduction under ether was attempted and the limb fixed in wide abduction in a long plaster spica. At the time much resistance to manipulation was encountered and complete reduction was doubted. Three days later another roentgenographic record was made which demonstrated that accurate reposition had been obtained (Fig. 3). Immobilization was continued for twelve weeks. This was none too long, because union at the epiphyseal line is slow. Roentgenograms taken when the plaster was removed portrayed normal contour of head and neck (Fig. 3). After walking was resumed there was unusual stiffness at the hip, and the gait was very awkward, but improvement was continuous and full function returned at the end of six months. Flexion was the motion slowest to recover. Measurements, taken at various times, failed to develop any inequality in the length of the two legs.

This case presents a number of instructive features, one of which is the lesson to be learned in the early treatment of these cases. Whitman has emphasized the fact that complete fracture is frequently preceded by a partial separation of the epiphysis. In one of his cases the interval was fourteen months. It is reasonable to assume that if the original injuries were recognized and properly treated, the secondary fractures might be prevented.

Another interesting feature was the peculiar abduction limp, present after the first injury. Abduction deformity of the hip is a rarity in itself and what significance it may have in incomplete epiphyseal separation is a question. It is sufficient here simply to record the observation.

Still another peculiar feature, and a misleading one, was the localization of the pain and tenderness, after the complete fracture, in the shaft of the femur. Without appreciation of the earlier accident it would have been unnatural to suspect injury within the joint.

This case further illustrates the value of Sheriton's⁵ sign. In the normal subject the inner border of the neck and head of the femur and the horizontal remus of the pubes forms a symmetri-

⁵ Personal communication from Mr. Robert Milne, Surgeon to the London Hospital, London, England.

cal arch, which is bisected vertically by the ischium. The curve of this arch varies with the degree of abduction of the femur, but its symmetry is constant. In disease or injury of the hip, this relation is often disturbed. Thus Fig. 5 shows a tracing of the normal arch from the roentgenograms in Fig. 1, Fig. 6 represents the broken arch in Fig. 2, and Fig. 7 shows the restoration of the arch in Fig. 3. This architectural formula furnishes additional evidence of the accuracy of the reduction.

NOTES ON THE TREATMENT OF FRACTURE OF THE HIP IN ADVANCED LIFE.

As the result of a somewhat extensive experience in the treatment of fractures during the past few years, I have developed views concerning fracture of the upper extremity of the femur which do not altogether conform to the general teaching.

It has been impossible for me to discover any unusual disability in the process of fracture repair in old people, provided the fracture is reduced. This applies as much to fracture of the hip as it does to fracture of other bones. The trouble has been that these cases, as a rule, have never been reduced. In fact, almost no attempt has been made to effect actual replacement; instead, the efforts have been limited to partial replacements. What would be the result if this was the policy in other fractures with wide displacement of the broken surfaces?

Previously, I had accepted the tradition, that absorption of the neck and head of the femur, so often seen in badly treated cases, was due to the deficient blood supply, a theory which has never been overburdened with proof. It is more reasonable to ascribe this atrophy to non-reduction, otherwise it is difficult to explain the uniform absence of atrophy and the excellent union in the cases in which the fragments have been accurately replaced. It is likewise difficult to see why absorption should not occur when the broken surfaces are not contacted and capillary communication between them reestablished. The reason why union is so good in impacted fractures undoubtedly lies in the fact that in these cases there is at least partial contact.

I have not been wholly able to subscribe to the principle that it is best not to attempt correction of impacted hip fractures. Why should these deformities go uncorrected, except for the reason that no treatment is indicated? Like Colles' fracture of the wrist, the disability in hip fractures is due to the change in the axis and plane of the joint, and the deformity should be corrected just as much in impacted as in unimpacted cases. There is, of course, considerable variation in the degree of deformity in impacted fractures. In a few instances there is little or no deformity and nothing to correct.

The method of producing artificial impaction in unimpacted cases is illogical, because it is necessary to oppose the two broken surfaces to obtain impaction, and when these have been replaced, nothing is gained by driving the ends together any more than in fractures of other parts.

Concerning the various conservative methods of treatment I have been forced to the conclusion that they are only modifications of no treatment at all. Traction does help to control spasm, and provides semi-immobilization of the limb, but it is an exception when it accomplishes much more. Lateral traction cannot be applied with sufficient force to overcome the powerful leverage of the muscles of the upper thigh. The Hodgkin's splint is so constructed that it prevents any effective pull. The unfortunate feature about the conservative methods is that they are uncomfortable. Any fracture of a large bone inadequately immobilized is painful, and this exerts an unfavorable effect in the elderly hip cases.

Much has been said about the high mortality in fractures of the hip in old people. In fact, there are some who favor an ultra-conservative policy, on the basis that, if these cases do not succumb to pulmonary or other complications, they have only a few years to live at best. This attitude has been effective in preventing the adoption of new methods of treatment, but my experience has led me to believe that, if the high death rate is not exaggerated, it is at least unnecessary. Good fortune may have had something to do with the fact that in a series of forty-eight cases in people past sixty years of age, only six died, but

I ascribe other reasons. It has been due largely to the fact that most of these cases received abundant fresh air, that the normal pulmonary circulation was maintained by elevation of the head and chest, that the bronchial mucous membrane was kept freely stimulated, that a majority had the fracture reduced, the leg immobilized in plaster, and were free from pain.

The only form of treatment as yet proposed which attempts reduction of fractures of the hip is the Whitman method. This method, however, has not been extensively put into practice. Objection has been made that it does not really reduce the fracture. That the upward displacement is almost always corrected has been subjected to roentgenographic proof by different observers, and the roentgenograms of the case described above testify to this fact. Objection has also been made to the danger to elderly subjects of a general anæsthetic, and the exposure which the method entails, but this fear is to a large extent groundless. I have used the method in 32 cases without an accident or complication of any kind. Some of these were octogenarians. The eldest was eighty-six, and she is now walking without support. Some were unfavorable risks. One woman was a hemiplegic, with fracture of the sound leg, and had only recently recovered from pneumonia. But the feature which stands out more prominently than any other is the comfort these patients experience. They have an appearance of well-being; they sleep well; they can sit up; they can move without pain; and they do not develop bed-sores. I have had occasion to observe at the same time patients under the Whitman method and others under the so-called conservative methods, and the contrast in the matter of comfort alone has always been striking.

THE CORRECTION OF THE DEFORMITY IN FRACTURE OF THE HIP.

In order to understand the problem of reduction, it is necessary to appreciate the fact that there are two distinct types of deformity in fracture of the neck of the femur, the elevation of the neck which produces the shortening and the outward rotation of the shaft manifested by eversion of the foot. Nearly all efforts

have been directed to overcoming the former, while scant attention has been given the latter.

The essential principle upon which the Whitman method is based is the correction which results from forced abduction of the thigh. In fact, it is frequently spoken of as the abduction method, and the author has taken pains to describe in detail the mechanical effect of abduction. This, however, only overcomes the upward displacement.

The importance of correcting the rotation deformity is found in the fact that only partial contact of the fractured surfaces is possible, unless it is fully rectified. When the femoral neck is broken, the fractured surface of the lower fragment revolves with the shaft and faces forward instead of inward (Fig. 7). It is not sufficient to turn the foot so that it points forward. This is proven by the fact that permanent eversion deformity is the rule even in so-called cured cases. What generally happens is jamming of the rough fragments with anterior bowing of the neck. The test of reduction of the rotation is the restoration of the normal range of inward rotation (Fig. 8). Likewise it is not enough to attempt vague manipulations. They must be definite and intelligent. Effective correction can only be accomplished by first increasing the deformity and unlocking the fragments, as is done in Colles' fracture.

In the application of the abduction method, it is essential that attention be given to details and that emphasis be placed on the correction of the outward rotation. I will describe briefly the routine which I have adopted.

Whenever it is possible, reduction is attempted as soon as possible. Not only are the muscles more relaxed, but there is usually little evidence of shock in the first twenty-four hours.

Everything is done to minimize the risk to the patient, and he is disturbed as little as possible. As a rule, the ether is administered, the reduction made, and the plaster applied, with the patient in his own bed. Unless the diagnosis is doubtful the ordeal of roentgenography is omitted, except in young, vigorous subjects. The etherization is the lightest and shortest possible, simply serving to cover the few moments required for

the manipulations of reduction, no effort being made to paralyze the muscles.

The manipulations are made with the patient flat on the bed and the thigh in semiflexion. The first step is the reduction of the rotation deformity. This is done by increasing the outward rotation, followed by forcible inward rotation. The second step is the correction of the upward displacement by hyperabduction with the pelvis fixed by holding the well leg in wide abduction. A long plaster spica is then applied with the knee and hip in slight flexion. This is done because it lessens the pain and stiffness of the knee so much complained of after the plaster is removed, and because patients can sit up more easily. In hospital practice the work is done on a special fracture table which facilitates both the time and the labor (Fig. 9). A portable modification of this table to be used on a bed has also been designed (Fig. 10).

In conclusion, I wish to add that experience has convinced me that the Whitman method has demonstrated that it not only makes accurate reduction of fractures of the neck of the femur possible, but that it is the safest method. It is the method of choice when there are no unusual contra-indications. In my own case, I would assume the risk in order to obtain the comfort which it provides, if for no other reason.

DISCUSSION.

DR. E. H. ARNOLD (New Haven): The condition of which Dr. Hawley's paper treats is fortunately rare, for even with the aid of the X-ray, it offers considerable difficulty in diagnosis. One fact in this paper merits attention, namely, that while this condition had existed for one year, there was no shortening. This would shake somewhat our belief that interference with the epiphyseal end must necessarily mean inhibition of length growth of the bone. If this experience should be repeated in other cases, we may approach surgery of the shaft of long bones in the neighborhood of the epiphyseal line without fear of loss of eventual union between shaft and epiphysis and diminished length growth. It has been my experience in cases of osteomyelitis in the upper part of the tibia that surgical interference in this region may extend to the epiphyseal line and I am not sure but what on some occasions I have even invaded the epiphysis itself, without interference with union and growth.

The doctor's attitude in treatment of the fracture of the neck of the femur is altogether my own. I am quite sure that no matter what kind of fracture we have of such an important weight carrier as the thigh, it ought to be reduced. This is the best and the only treatment under any circumstances whether the patient be old or young. As complete reduction with ordinary means is not attained at first, these people, by being encased in a plaster spica, are always secure against that great pain and shock which comes from manipulation. Such manipulation is unavoidable without plaster encasing even if the patient is in bed, for you have to manipulate for cleansing purposes, for using the bed pan and so forth. The plaster paris encasing also, since it allows of change of position, is the best means for prevention of bed sores.

The high death rate among old people from fracture of the neck of the femur and thigh bone in my opinion is nearly entirely due to static congestion of the lung. Once more a plaster paris spica allows you to change the position of the patient, to elevate the trunk and if the patient be not too feeble, they can be up out of bed and walking by means of crutches certainly within a week after the dressing is put on. The great atrophy of the neck of the femur in these cases is in my opinion largely due to the impaction. When fragments of bone, bony spicula, are driven into each other, the impacted bone acts like a foreign body and produces atrophy. This is one reason why impaction should always be reduced and the impaction overcome. If this is not done, we may have the impaction simulate union and when the patient gets up and walks, the greater pressure of the weight imposed accelerates the atrophic process and we then get the shortening. It should then be the rule to reduce and to obviate the impaction. The method outlined by Dr. Hawley is entirely rational and I have employed it ever since Whitman brought it to our attention with practically uniformly good results. I differ somewhat in my method. I abduct first, for in my experience to rotate first in impacted cases did not break up the impaction; having broken up the impaction, I then rotate. Of the necessity of this rotation I have convinced myself in operative cases. Age does not come in for much consideration, in these cases, especially chronological age, for this is not always synonymous with physiological age. It is the latter that determines the prognosis. We may have an octogenarian with very good blood vessels and otherwise in good condition and he will certainly make union. On the other hand, you may have people not much beyond middle age with a well-established arterio-sclerosis. In these union may be delayed or altogether impossible. This makes no difference in the treatment, for all these people should be given the benefit of the doubt. I have certainly seen fractures of the neck heal in people after seventy. The ability of bone to regenerate and form union is not limited by age nor in fact by disease. I have several cases of bone carcinoma on record where after

spontaneous fracture of long bones, union took place and fairly rapidly too.

DR. ANSEL G. COOK (Hartford): There is a slanted end of the femur taken from Gray. It develops by five centers. This is one, two, three, four, five. These are the lines of epiphyseal cartilage separating them. The cartilage does not appear until 18 years so that you see the younger the child the softer the bone. This plate is what the paper has been about, a displacement here. It is a question of whether it is a displacement here or a fracture of the neck. In a young child that neck isn't more than three-quarters of an inch long and I doubt if it would be bad to involve the epiphyseal cartilage, and if the cartilage was destroyed here it would not make very much difference. The separation here of the epiphyseal cartilage in children is practically equivalent to a fracture of the neck of the adult. Now Dr. Taylor of New York, who had a paper at the meeting of the Orthopedic Society a few days ago in Detroit, described a number of cases of what he called quiet hip disease and Dr. Legge of Boston has collected a large number. The X-rays were practically negative and yet these people limped and limped. They gave up the idea thinking it was tuberculosis although many had been treated that way and finally came to the conclusion that the results must be some fault of trauma involving the cartilage. The description of the case in the paper was very similar to that. This boy had some sort of accident. He evidently injured that cartilage there. He was more or less lame for a year and then he had a final injury that completed the separation. Even the X-ray failed to make a correct diagnosis. There are probably a great many times that the cartilage is injured that we have no way of finding out exactly what it is. Of course the way to treat it is to know what it is, to reduce it and put it back, and the thing to remember is that you can have a displaced fragment here with the separation of the epiphyseal cartilage, that it will grow together again just as a fracture will grow together again.

In regard to fractures in adults the Whitman operation described in the paper is not new. I don't know how old it is. My edition of Whitman was published in 1907 and the description of the operation is in that. Evidently it was known before that. It wasn't accepted very well at first but it is gradually growing in favor; I believe in it myself. I have used it a number of times. I would have used it a great many more times than I have except that I have a wide cot with jointed legs on which I could put the patient and get practically the same position. The idea of the Whitman operation is if the bone has broken here, if you make abduction of both legs as far as they will go and then turn the toes in like that, now you put your patient in that position and put on a spica, so I believe that is the best thing to do. That is what I should like to

have done if I should be so unfortunate as to have a break. On the other hand, I think that Dr. Hawley and Dr. Arnold and others are inclined to be a little bit too sanguine about it. I believe fracture of the hip in anybody is always a serious accident and that uniformly good results are not to be expected, and I should want this done. I should consider myself lucky if I came out with a good leg. I believe it is the best thing to do. If I was called upon to testify in a court to-day as to what the proper treatment for a fractured hip was, I should say that we haven't yet all of us decided upon what the best treatment was, that a doctor should use his judgment according to this case. I would certainly break up the traction if the leg was in a very bad condition, but as a rule the leg is not in a very bad condition. When it is impacted I am inclined to let impacted fractures alone. I have seen a great many impacted fractures when the leg was in position and got well with simple treatment in bed.

Some Precancerous Affections.

JOHN E. LANE, M.D., NEW HAVEN.

By the term Precancerous Affections are designated certain pathological conditions, which for some time develop clinically as benign growths, but which at a latter period are so frequently the starting point for carcinoma or sarcoma, that this relationship must be assumed to be in some degree etiological, and not mere coincidence. In the course of their development these growths usually become borderline lesions, i. e. lesions in which the clinical, and sometimes the microscopical, diagnosis of benign or malignant is difficult or impossible.

Appearing on the skin and contiguous mucous membranes are numerous growths of this sort which belong to widely different pathological groups. The studies of recent years, on the early diagnosis of malignant lesions, have begun to give them the importance that they deserve. There are few statistics, but in one series of sarcomata of the skin, only 23 per cent were found in which the previous presence of a benign lesion could be excluded, and in 977 cases of epithelial tumors of the skin and visible mucous membranes, every one developed in a pre-existing lesion (Bloodgood).

Among the more important of these lesions are (1) Naevi, (2) various so called dystrophies, such as senile keratosis and pre-senile dystrophy of the skin, (3) Paget's Disease, (4) Leucoplakia and (5) numerous other conditions such as scars, lupus vulgaris, certain occupational dermatoses, etc.

NÆVI. As the term *nævus* is used somewhat differently by different authors, it may be best to define it. Some still apply it to "simple pigmentary spots developed during intrauterine life or during the first months after birth." Others, especially in this country and England, limit it to apply only to "congenital cutaneous angiomata." These interpretations have however been practically abandoned, and at present all circumscribed cutaneous

deformities of congenital origin are usually classed as *nævi*. This is a large group as it "includes hypertrophies of any elements of the skin, whether blood-vascular in structure or composed of lymphatic vessels, sweat glands, sebaceous glands, adipose tissue or epithelial cells." While carcinomata may develop on any of the *nævi*, there are two groups which belong more particularly to the precancerous lesions. They are the *nævi spili* or flat pigmented *nævi*, characterized by brown or blackish spots without marked thickening of the skin, and the *verrucae molles* or cellular, soft verrucose *nævi* or soft moles.

NÆVI SPILI. From the flat pigmented *nævi* develop the malignant melanosarcomata or carcinomata, which usually occur in young people, or lentigo maligna of elderly people, which is classified as sarcoma or as carcinoma by different pathologists. When malignant changes begin to take place, the growth is usually very rapid. The spot takes on a different color and at the same time becomes somewhat verrucose, though occasionally generalized melanosis occurs with no local change. The neighboring lymph glands fill with pigment cells, and a generalized melanosis of the internal organs rapidly follows.

VERRUCAE MOLLES. The cellular *nævi* or soft moles present a great variety of appearances. They are more or less elevated, with the surface slightly or very rough, may be pigmented or not, and frequently are hairy. All of the varieties, in elderly people, are frequently the starting point of malignant tumors. When such changes occur the progress is usually as follows. The *nævus*, which for years has remained stationary, or has shown a hardly perceptible growth, begins to develop rapidly. There is a slight reddening of the surrounding tissues with slight induration, and extension of the pigment if the mole is a pigmented one. Slight ulceration follows, usually explained by the patient as due to scratching or other irritation. The tumor increases in size and the ulceration extends, though the malignant character is not manifested very early, and the course may be that of a superficial epithelioma. If there is no intervention the surrounding tissues are usually invaded, the neighboring glands are affected and there is likelihood of visceral involvement.

PRECANCEROUS DYSTROPHIES. The precancerous dystrophies or keratoses include a large group of affections resembling each other in many respects. The more important ones are (1) Senile keratosis, a condition developing on senile atrophy of the skin, (2) Presenile dystrophy, a condition greatly resembling the preceding one, but which develops in earlier life in persons much exposed to the sun and wind.

KERATOSIS SENILIS. Keratosis senilis is a very common condition, and it is the condition upon which epitheliomata of the skin frequently develop. It is a complication of senile atrophy of the skin, of which there are two distinct types. (1) The usual type of senile atrophy is characterized by parchment-like thinning and transparency, roughening similar to that seen in mild grades of ichthyosis, white atrophic spots, spots of pigmentation and telangiectases. This condition is most frequent on the uncovered parts of the body; face, neck, and the back of the hands. (2) In the rarer colloid form of senile degeneration, the skin is not thinned but is rather slightly thickened, has a yellowish straw color with an uneven surface, and is soft and wrinkled.

On these degenerated skins of either type, there frequently develops rarely before the age of fifty, and usually much later, the condition known as keratosis senilis whose appearance at first is very similar to that of the seborrhoeic warts, so similar indeed that they are often classed together. However, a careful examination discloses considerable difference in their appearance, location and development. The seborrhoeic warts usually appear in large numbers especially on the shoulders, neck, chest, waist, and flanks. They are nearly flat and the crusts that form their covering are the color of normal skin or grayish brown, are fatty and greasy and are but slightly horny. These coverings are easily removed with soap, ether, etc., leaving an irregular, finely cauliflower-like surface, with no hemorrhage, and are easily cured with applications of soap, ether, salicylated collodion, light curettings, etc., and less frequently undergo carcinomatous change.

Keratosis senilis or keratoma senile, sometimes called concrete sebaceous acne, begins with the appearance of yellowish or brown

spots, somewhat resembling the seborrhoeic warts, or as wart-like elevations, or as red, telangiectatic, irregular and sharply circumscribed spots. These spots are soon covered with a rough, horny, elevated surface of gray or brown color, brittle when rubbed, and if the covering is removed there are usually small hemorrhages. Although there is occasionally spontaneous healing, these growths usually persist. Their location also is different from the usual location of the seborrhoeic warts, being most frequently found on the forehead, temples, nose, cheeks, and the backs of the hands.

A keratosis of similar appearance and progress frequently develops on presenile dystrophy or atrophy of the skin, a condition which appears earlier in life but which has the same general characteristics as senile atrophy. This condition was first described by Unna as Sailor's skin (*Seemannshaut*). Later Jadassohn, finding it frequent in the peasants living in the Alps, gave it the name of Farmer's skin (*Landmannshaut*). Sutton of Kansas City recently describes it as being more frequent on the plains of Kansas than in sailors. As a matter of fact it seems to be frequent in almost any locality, in persons whose occupations expose them to the wind and sun. Its location is the same as that of the senile atrophy.

The early appearance of carcinomatous changes in these growths is usually not marked or rapid. There is gradual thickening of the crusts, followed by slow superficial ulceration, with little if any induration. All of these changes must be regarded with suspicion.

PAGET'S DISEASE. Paget's disease was first described by Sir James Paget in 1874, in a paper entitled "On Disease of the Mammary Areola preceding Cancer of the Mammary Gland." It is found most frequently in women over forty, and was described by Paget as attacking the nipple, areola and mammary gland, but since then it has been found to attack, less frequently, other locations. In men the most frequent sites are the scrotum and perinæum. The progress of the disease is very slow, its development often extending over months and years. For many years there was doubt as to its nature, but it is now conceded

by all to be carcinoma. Its first signs are a slight crust on the nipple, with a slight tendency to warty proliferation. In the widely extended cases there are frequently eroded and ulcerated patches with parchment-like induration of the borders. At this stage there is very rarely any glandular involvement, but there is never any spontaneous healing or even improvement. Later in the disease, deep nodules appear with glandular involvement and the other usual appearances of malignant carcinoma of the breast. Eczema of the breast is the disease with which it is most often confounded, and in the early stages the diagnosis presents much difficulty and often can be decided only by a pathological examination. As the disease progresses persistent horny crusts at the base of the nipple and thickening and induration of the epidermis are usually distinctive.

LEUCOPLAKIA. The mouth and lips are frequently the seat of precancerous lesions. One of the most interesting and important of these is leucoplakia. Some reference to its etiology should be made. Bazin, in 1868, was the first to recognize and describe its essential symptoms, under the name of *psoriasis buccalis*. Later it was studied and described under many different names by many different observers, notably Kaposi, Schwimmer, Fournier, Hutchinson and Landouzy.

The relation of syphilis to leucoplakia, and to a lesser degree of leucoplakia to carcinoma, has for a number of years been the subject of a great many discussions, and its pathogenesis still remains one of the most controverted pathological questions. Kaposi, in 1874, was the first to assert its syphilitic origin. Many years ago Hutchinson wrote that "the association of syphilis and leucoplakia of the tongue is so frequent that it is difficult to avoid an impression that syphilis must exercise some degree of predisposing influence." Schoengarth, in a review of the cases published up to 1896, found a syphilitic history in 65 per cent of the cases. Fournier in 1900, in a study of 300 cases, wrote, "We can say that in an immense majority of cases leucoplakia is attributable to and constitutes a manifestation of syphilis."

About the same time Gaucher found syphilis in 90%-95% of his cases and asserted that it is always of syphilitic origin. A

few years ago he wrote: "I do not hesitate once more to affirm that leucoplakia lingualis is always of syphilitic origin, and what I say of lingual leucoplakia is equally true of leucoplakia of the lips and cheeks." Results of investigations since the use of the Wassermann reaction do not vary greatly from those previous to it. Sequeira found that 12% of his cases of tertiary syphilis had leucoplakia. Guszmán found 94.8% of his cases of leucoplakia were syphilitic, and in his examination of 147 patients who had paresis, he found 45.6% were affected with leucoplakia. Bruck found the Wassermann positive in ten out of twelve cases of leucoplakia examined. Jadassohn states that the percentage of syphilis in leucoplakic patients becomes greater the more regularly systematic Wassermann reactions are made on the cases. On the other hand Erb and Neisser assert that a large number of typical cases of leucoplakia exist without preëxisting syphilis. Others urge the uselessness of anti-syphilitic treatment in these cases as a proof of non-syphilitic origin. But the strongest argument against the syphilitic origin of all the cases is found in the fact that occasional cases of typical leucoplakia are found in patients with a fresh syphilitic infection. A moderate statement of the present belief seems to be that in the majority of cases leucoplakia develops on a syphilitic basis, but that we are not yet justified in calling it syphilitic.

In regard to the other etiological factors of leucoplakia there is no difference of opinion. All are agreed that constant irritation is almost a *sine qua non* for its development, and that it is rare even in syphilitics without this irritation. In the case of buccal leucoplakia tobacco has been given the first place, so that the formula "syphilis plus tobacco equals leucoplakia" is often true. The fact that it is almost exclusively a man's disease substantiates this observation. The irritation from bad teeth is the next most important cause.

There are about the same divergent views in regard to the relation between leucoplakia and cancer as there are in regard to syphilis and leucoplakia. Fournier found that about 30% of his cases of cancer of the tongue were syphilitic. Von Bergmann found that 54.6% of 159 cases of cancer of the mouth

developed on leucoplakia. Thomas in seven cases of primary cancer of the floor of the mouth, found three starting from leucoplakia. Joltrain found the Wassermann positive in 6 out of 8 cases of cancer of mouth developing on leucoplakia. Gaucher again is more radical. He says "Every cancer of the tongue is, according to my observations, consecutive to leucoplakia, and all leucoplakia is of syphilitic origin; from which I do not hesitate to conclude that cancer of the tongue is peculiar to syphilitics and is a result of syphilis." Gougerot echoes the opinion of Gaucher. A few months ago he wrote: "Now we know . . . that all leucoplakiæ . . . lingual, labial, genital, etc., are of syphilitic origin. The genesis of cancer of the tongue is therefore easy to sum up; syphilis, leucoplakia, degeneration of leucoplakia, cancer." At the same time he reports two cases of cancer of the œsophagus originating on leucoplakia. Many believe that these conclusions of Gaucher and Gougerot are wholly unjustified. Darier estimates that from 15%-20% of the cases of cancer of the tongue develop on leucoplakia and there are none, I think, who would not consider that a conservative estimate. As leucoplakia rarely develops without chronic irritation, so it rarely undergoes carcinomatous degeneration without the continuance of the irritation.

Leucoplakia most frequently develops in the mouth but it is occasionally found on the glans penis, the female genitals, and more rarely in other localities. The most frequent location in the mouth is perhaps the inner side of the cheek, but as it is less easily seen here and is less characteristic and marked than on the tongue it is more frequently overlooked. On the tongue the anterior half is the part usually affected. On the lips spots are found on the inner surface, free border or exposed red surface.

Leucoplakia in its early stages is not often observed, as the disease for a long time gives few or no symptoms. In the earliest stages there is smoothing of the mucous membrane, with some redness, which is soon followed by the appearance of a thin opaque coloring. Later the surface is covered with a thin, transparent epithelium with characteristic whitish, gray, opal

or pure white color. The spots are irregularly shaped, usually more thickened in the center than at the edges, which commonly fade gradually into the surrounding normal tissue, but which are sometimes sharply defined. These are the mild cases. In those that progress there is more thickening of the mucous membrane, and the spots appear with a mother of pearl or snow white surface, which may remain smooth but is more often wrinkled. Furriness and horny elevations appear, giving the patch a warty appearance. These elevations are usually accompanied or followed by fissures, before the development of which, subjective symptoms are ordinarily lacking. Carcinoma is generally not thought of until the appearance of the fissures, but carcinomatous changes may take place below the surface before their appearance. As long as the spot is smooth and soft there is no immediate danger, but it should be regarded with suspicion as soon as it begins to appear warty or even greatly thickened.

VARIOUS LESIONS. Of the large number of other conditions which more or less frequently undergo carcinomatous changes, a few of the more important should be mentioned. Scars often undergo carcinomatous or sarcomatous changes. In Bloodgood's report above referred to, 20 of the 48 sarcomata of the skin developed from scars. Smokers' burns, warts, excoriations and chronic fissures of the lip frequently become carcinomatous and should always be regarded with suspicion on account of their deceptive benign appearance. Bloodgood's studies of two hundred cases of cancer of the lower lip show that chronic lesions of this sort are almost invariably malignant. Professional radio-dermatitis need only be mentioned. Lupus vulgaris, lupus erythematosus and psoriasis occasionally become the points of development of cancer, though in many instances the short, frequently repeated treatments by X-ray, in the early years of its use, could often be invoked as the exciting cause in these cases. Among the occupational dermatoses, chimney sweeps' eczema was formerly a frequent starting point for cancer, and at present this is sometimes the case with the dermatitis of tar and paraffin workers.

TREATMENT.

Nævi. The treatment of the majority of nævi is not necessary nor is it advisable as long as they are quiescent, and in location not subject to irritation. If treatment becomes necessary on account of irritation or for cosmetic reasons, it is important that the lesions be destroyed with as little irritation as possible. Excision is the method of choice, and there is a justifiable growing belief that all nævi of any size, except the vascular ones, if treated at all, in any stage, should be treated radically, and this is the only justifiable treatment of nævi of any size that contain a large amount of pigment. In small nævi the cautery, though at present somewhat in disfavor, is an excellent method of treatment. Electrolysis and carbonic acid snow are much in favor, and in nævi that can be wholly destroyed in one or two treatments there is no objection to their use. On the appearance of any change in the nævi complete removal with the knife, best followed by cauterization, in case of the pigmented ones, of the surrounding tissue with the actual cautery, is the only treatment to be considered, and in those in which sarcoma has begun to develop even this treatment is frequently, perhaps usually, unsuccessful.

Keratoses Senilis. In its early stages, keratosis senilis and the allied conditions can usually be successfully treated by the removal of the crusts and the applications of keratolytics, such as resorcin and salicylic acid. Carbonic acid snow and fulguration are also usually efficient. As these lesions most frequently develop the slow-growing epithelioma of the rodent ulcer type, such procedures can be safely tried. If they are not promptly successful or if they are not seen before the lesion has become a borderline or doubtful one, the choice of treatment lies between excision, X-ray and radium. The great majority of these lesions, as well as the superficial epitheliomata which develop from them are easily cured by X-ray, and their most frequent location on the face, and especially about the eyes, makes this treatment the one usually chosen. But it should not be forgotten that the more malignant forms of carcinoma occasionally develop from these lesions, and that in such cases there may be

a temporary or permanent cure of the local lesion, while the neighboring glands are becoming involved, the patient in the meantime losing the most favorable time for a permanent cure by operation.

Paget's Disease. As Paget's disease is of extremely slow growth, and in its early stages frequently not to be readily diagnosed from chronic eczema, it is justifiable to try for a few weeks the treatment for eczema. If this still leaves the diagnosis in doubt, it should be established by pathological examination, and if found to be Paget's disease, should be given at once to the surgeon for treatment. In this case as in that of other carcinomata of the breast the X-ray and similar treatments have no place before the operation.

Leucoplakia. A sufficient percentage of the cases of leucoplakia are syphilitic to necessitate prophylactic treatment in all cases of syphilis. This consists in ordinary buccal hygiene, with prohibition of tobacco and other irritants. After the development of marked leucoplakia the local treatment consists of mild, non-irritating mouth washes. Especially to be avoided are irritating or caustic applications of silver nitrate and the like. Of course tobacco and irritants must be forbidden. Anti-syphilitic treatment in the earlier stages may be tried with some hope of success in preventing further development, a combination of injections of salvarsan and calomel being the most efficient. Potassium iodide, if used at all, should be employed with great care, as it is likely to stimulate carcinomatous growth, if present. If there is the slightest suspicion of any carcinomatous change, it is not justifiable to try any such treatment. Years ago Hutchinson, writing on the difficulty of diagnosis between syphilitic diseases and carcinoma of the mouth, advised strongly against giving syphilitic treatment a trial for longer than a week or ten days, saying that if any doubt still existed it was always safer to operate. To-day in these cases a longer delay is hardly justifiable and the proper treatment is preparation for operation, pathological diagnosis by frozen sections, followed by immediate removal if evidence of malignancy is found. The same treatment is indicated in smokers' burns, warts, fissures and scars of the lips,

especially the lower lip, which do not heal promptly under other treatment. It is from these that the most frequent of the malignant lesions of the skin and mucous membrane originate, and glandular involvement takes place extremely early in them. All caustic applications, even mild ones, are dangerous. In these locations the danger of incomplete operation of malignant growths, i. e. removal of the local lesion, with delay for pathological diagnosis before completing the radical operation, seems to have been well established by many observers.

There have been about 50% of cures of carcinomata of the lower lip by radical operation after the glands have become involved. With the present technique I believe the percentage is somewhat better, but there is good evidence that if simple excision is done within the first month or two of the appearance of the lesion the cures will approach 100%.

Owing to their location, the earliest changes in all of the various affections that have been considered can be easily observed, and therefore a much better opportunity is offered for the prevention, or early diagnosis, treatment and cure of cancer than is offered by lesions in other localities. In 173 cases of lesions of the skin and visible mucous membrane that were treated by excision in the benign stage, there was not a single local recurrence or death from cancer (Bloodgood).

The points to be emphasized are these:

(1) In many cases carcinoma is already started in many of these lesions at such an early stage, that they present none of the clinical characteristics which are usually associated with malignant disease, and the oftener pathological examination is made in this stage, the more frequently carcinomatous changes are found to be present.

(2) The best opportunity for a cure is in this early stage, in which it frequently is impossible to make a clinical diagnosis of malignancy.

(3) The safest means of treatment of the majority of these lesions is surgical. If done at this stage there is little deformity, and the removal of an insignificant lesion that proves to be benign is always a justifiable prophylactic procedure.

DISCUSSION.

DR. JAMES D. GOLD (Bridgeport): I have very little to add to Dr. Lane's paper. He has covered the ground very thoroughly. The treatment of the small pigmented nevi with the electric needle, cautery, or with the carbonic snow, excellent results have been obtained, and it is better for the cosmetic results if occurring on the face. Where they have continued to grow and develop a cancerous condition then the question is whether carbonic snow will be radical enough. Where the pigment becomes very dark after remaining quiescent for a long time and then begins to develop and the pigment becomes practically black, then is the time to operate, use the knife and use it freely. As a rule they are melanotic, and the irritation from the needle, or from the snow (which I have found to my own sorrow in two cases in my earlier treatment of these), the melanotic condition increases very rapidly, caused by the local application.

For senile warts glacial acetic acid in one or two applications gives excellent results, with practically no irritation.

DR. THOMAS M. BULL (Naugatuck): I am very much interested in this paper by Dr. Lane because it is on, in my opinion, a very important subject and one which is of increasing importance because this world is becoming peopled by an older set of folks than it was two or three generations ago. The proportion of mortality of children and adolescents is much less now and the result of that is, as we haven't achieved immortality yet, we must suffer from the diseases that come from maturity and old age diseases, such as those of the heart and the kidneys, and precancerous affections. We must give more attention to them in the future.

In the matter of leukoplakia I believe a large percentage of them are syphilitic, yet I would not want to say that all of them are. But yet in many of the nervous diseases it is interesting to watch the gradual rise in percentage of the cases of these affections which is laid to the syphilis. In the last twenty years, the percentage has risen from about ten to, as some authors say, one hundred per cent.

I want to speak especially of these lesions of the face and hands because they are very common. I would like to just read a list of the lesions which I have found to occasionally become epitheliomatous. This list is made up partly from Dr. Lane's paper and from one by Dr. Bainbridge and one by Professor Bulkley:

Seborrheoids, keratoses (senile and presenile), lupus, psoriasis, dermatitis, adenoma and xeroderma; nevi of all kinds, scars and keloids very commonly degenerate into epithelioma; warts and wens of all kinds, smokers' burns, ulcers and fissures of the lips, syphilis, tumors of all kinds, and X-ray burns.

Now as a matter of fact in taking up this list, we have about all the chronic lesions that the face is liable to—and since they are all liable to degenerate they all need careful watching to say the least.

Everyone occasionally sees the horrible results of allowing a cancer in the face to degenerate and act until the mouth and the tongue and the nose and eyes and even the skull and bones are gone. It is one of the most awful things I have ever seen in my life. What is the cause of this degeneration? I believe personally it is due absolutely to bacteria. About every other disease, tuberculosis and syphilis and many others, are undoubtedly due to bacteria, and coupled with these bacteria some irritation. What that irritation is in many cases is easy to find out. I think in cancer of the face one of the most common things is the picking, scratching, and rubbing. It is really ridiculous to see how a person sometimes will keep working away at a little lesion of that kind on the face and if it is coupled with an irritation the scratching is very apt to be very great indeed.

And another thing, I believe that shaving is one of the irritations whose effect is considerable. A generation or two ago if a man shaved once or twice a week he was doing all he ought in that line; and now many people shave every day and I have known some twice a day when they wanted to be especially good-looking. I believe that is one of the causes. It keeps up a constant irritation and changes this innocent dermatitis into a malignant type.

And then light. The fact that we have so much more light than we did. A generation or two ago candles or lamps with wicks half an inch wide were all we had and later had student lamps, and that was about as high as people went. At the present time with Tungsten burners and Mazda lamps and incandescent burners, night is very much lighter than day and there is a constant irritation. You know what that is in X-ray and violet rays.

And also tobacco is one of the great causes of this degeneration. It is perhaps rather a bad place to mention that here, but when you see a person pulling away on a big black cigar, warranted to kill at forty rods, you see what effect it has on his eyes. He keeps them shut up most of the time. You know what effect it must be on the mouth and lips and face.

Glasses were not worn two or three generations ago as much as they are now, and particularly the pinchers on the nose. That is one of the bad places, because the nasal ducts are the things very easily involved by a cancer beginning there.

One of the things that help to cause that degeneration is the deterioration of the blood, the products of intestinal intoxication. I believe it is one of the greatest causes of degeneration. I remember hearing Professor Bainbridge say once they inoculated one thousand white rats with

carcinoma. The number of takes was very small unless something was done to deteriorate the general health, and he thought that intestinal stasis was one of the very important causes.

Now in regard to treatment. I heard a surgeon say that they were so easily treated, these cancerous troubles of the face, that you could knock them off with a club. I don't think that will be very proper when there are so many other better ways, sulphuric acid, nitric acid, trichloroacetic acid, carbonic acid snow, X-rays, etc.

We use them all, and sometimes we are successful and sometimes we are not. The thing that I like to use best of all in all the small lesions of the face is the electric needle. You know the manner of using that and you can direct it to a hair breadth and do just as much as you wish to or just as little. Many of these other remedies that you put on and apply, you can't tell where they are going to stop. This is especially true of X-rays.

I want to say that if every doctor here would read this article which Dr. Lane has given us, not perfunctorily as some one says but read it over and over again just like a text book, I am sure it would be a great deal of use.

And one thing more, if you sit down in front of a glass and find out if you individually have some of these things beginning and take them off to-day, it will save a great deal of trouble ten or twenty years from now.

DR. WILLIAM H. CARMALT (New Haven): *Mr. President and gentlemen of the Society:* I hope, sir, you will obey the notice before you and call me down at the end of the five minutes allowed in discussion because if I should talk as I would like to on this subject it would extend over a good deal more than the allotted time, but I don't care to take more than that time; there are other papers to be taken care of.

I have been requested to call the attention of the profession of this state to the various societies which are studying this matter. As you know, I have here the notification from the American Society for the control of cancer; headquarters I judge from what they said in New York. They speak of the great increase of cancer as we all know, and ask the members of this society to coöperate with them in controlling this disease. Now so far as that goes this is simply what we are doing all the time. We control cancer as far as we can and assist not only this society but every other society that investigates this subject. There are throughout the country I imagine not less than ten or fifteen societies whose attention is devoted exclusively to research in cancer, and with the research means the control so far as it goes.

There is, as you know, the fund that has been left to Columbia University by Mr. Crocker of San Francisco in which Professor Woods is the director. There is a similar one I believe associated with Cornell Uni-

versity. The Rockefeller Institution of Medical Research is studying it all the time. There is a society of the same formed with a hundred thousand dollars to Harvard University of which Dr. John Collins Warren is the president. The State of New York has an institution at Buffalo, a state institution there, devoted almost exclusively to this subject. So that throughout the country there is an immense amount of work being done: we must add our little share to that. And one point, which I desire to speak of, is very important, namely that of being accurate in our statements and in our investigations and to have a clear understanding as to what we mean by cancer.

Now I am sorry to say that my pupil for whom I had great regard when he was a student has fallen under the false gods of the Johns Hopkins University and in his paper mixes up sarcoma and carcinoma as if they were identical. Now carcinoma and sarcoma are as distinct as a cow is from a horse. They are both malignant, likewise are the horse and the cow both herbivorous, but you can't breed one with the other and you can't breed the sarcoma on to the carcinoma. They are distinct. They have this quality of malignancy in common but that isn't a genetic relation and until we keep these two forms of new growths separate we cannot make the progress we should.

Carcinoma is openly and absolutely a disease of epithelial origin, no matter whether the epithelium originates from the skin or whether it starts from one of the internal organs, but it is a carcinoma and you never find a carcinoma unless you have the participation of an epithelial origin with it. Sarcomas are of connective tissue origin and in this paper the classifying the sarcomas and the carcinomas, or calling it cancer,—the term carcinoma is nothing but Greek for cancer,—calling a sarcoma a cancer is a mistake. The sarcomas to which the nevi belong are diseases of the connective tissues. They are not diseases of epithelial tissue. The further fact that the sarcomas are nearly always a disease of early life, while the carcinomas are a disease of adult life is important, though in the case of the melano-sarcomas we have an exception. Melano-sarcomas occur late in life but nine-tenths of the malignant sarcomas are diseases of infantile life, infantile and early youth.

Now the precancerous stage, the name of which originated with Dr. Hutchinson, starts late in life and is a true cancer and was meant to be and he included only the cancers. He didn't include the sarcomas, yet in the paper the distinction is not made; a nevus does not represent a precancerous stage of a melano-sarcoma.

DR. L. DUNCAN BULKLEY (New York): *Mr. President and gentlemen:* I fear I can hardly make myself clear in what I want to say, in five minutes, for I take a very different view of cancer from most of those who are studying and writing upon it. I do not believe that cancer is a purely local

disease, but that the local lesion, which we call cancer, is the result of a profound metabolic disturbance, tending ultimately to destroy life; I refer rather to cancer of the breast and internal organs than to that on the external surface, which, however, if wrongly treated can have fatal results in some cases.

It is true that the exact character of the metabolic disturbance has not yet been demonstrated, but there is abundant laboratory proof, as well as clinical, to support this thesis. Moreover many able surgeons, for very many years back, have more or less strongly expressed the same view. Dr. W. J. Mayo in his recent presidential address before the American Surgical Association refers to it several times, showing that there must be something back of the local lesion, some condition of the body, something to do with modern civilization and with the food and mode of life. Dr. J. B. Murphy, of Chicago, is very pessimistic in his lectures, in regard to the cure of cancer by surgical operation. And when we consider that some 90 per cent. of those once affected with cancer die from it, and that it is recognized that over 50 per cent. of those applying for surgical treatment are inoperable, and, further, that good men state that not over 25 per cent. of those operated on are really cured, is it not high time for the medical man to study the disease and see what can be done to stay its progress? For, according to the United States Mortality tables, cancer deaths have increased over 25 per cent. from 1910 to 1913, under *surgical* supervision, while in the same time tuberculosis mortality has fallen over 25 per cent., by carefully directed *medical* measures. In this short time I cannot do more than give you a hint of the lines along which I have worked for thirty or forty years, which are detailed in my small book on "Cancer, its Cause and Treatment." Some one told me it was too small a book to have any effect, and I asked if he had ever seen an acorn? I may not live to see the full grown oak tree, but I am confident that a generation will demonstrate a great difference in cancer mortality if these ideas can generally prevail. Dr. James Ewing recently told me that he believed I was right, and that the Cornell laboratory was devoting its whole attention to the metabolism of cancer, and no longer to its microscopical study.

Briefly the thought is this—cancer is steadily increasing with the advance of civilization, and its attendant errors in diet and mode of life. Cancer has increased with the consumption of nitrogenous foods, coffee, and alcohol. Herbivorous animals and primitive vegetarian aborigines very rarely have cancer. An absolute vegetarian diet, with proper medical measures, is certainly able to check and even to remove the disease, when not too far advanced, and is of the greatest service in prophylaxis.

The medical treatment of cancer varies with each individual case, but is summed up in proper elimination and support. Long observation in innumerable cases have shown that the kidney secretion and intestinal

elimination are seldom if ever correct in patients, even with very early cancer, both indicating a faulty metabolism and blood stream poisoned by toxic substances, evidenced by laboratory examinations. I wish I had time to elaborate the matter further, and to let you know more of my experience with cases along these lines for the past thirty and more years. But my time is up, and I must be content with having planted my acorn, with the hope that it may not have been in vain.

DR. R. A. McDONNELL (New Haven): *Mr. President:* I have listened with a great deal of interest to Dr. Lane's paper, and I think he has covered the subject excellently. There is just one thing that I want to emphasize and that is the necessity of dealing radically with beginning irritations of epithelial structures, particularly about the face and hands, and not fooling with them. I believe that more harm than good is done by the doctors in a large proportion of cases. If a doctor simply put on talcum powder and a little piece of gauze and a piece of adhesive plaster over that and left the thing alone, I think that he would not have some cases of metastasis to answer for, as he does with the common procedure of so-called cauterization with silver nitrate and other inefficient caustics. Doctors put on a five per cent. lactic acid solution, a little chromic acid solution, they put on three or four per cent. salicylic acid and collodion, and they do little ineffective curettings, and all kinds of things which can only result in real trouble. If you are going to do anything to a wart or mole you want to destroy it absolutely. That's my belief and I think it is the most important thing to get out of Dr. Lane's paper.

In older medical books you will find frequent references to caustics in the treatment of cancer. There has been some recurrence to the method of the use of caustics in preference to surgery and I think with considerable good sense and good results. Just as a general statement of a good way to treat these little superficial growths which are beginning to get busy, I would suggest that instead of X-ray, instead of carbon dioxide snow, instead of treating them with radium, a mighty good procedure is to thoroughly, with a sharp curette, scrape out all that will come out until you have got down to what looks like sound tissue and then take a wooden stick dipped in chemically pure sulphuric acid and gouge out all around there. That, I think, is good treatment and I have seen good permanent scars with no recurrence in a large enough number of cases to entitle that opinion to be worth something.

DR. G. C. SEGUR (Hartford): I wanted to speak in reference to the use of radium, not in my own experience so much, although I have had a patient under treatment, but of the opportunities which are offered here in Hartford at the present time, which are quite unusual. We are all interested in the work being done at Johns Hopkins under Dr. Kelly

and we are extremely fortunate here in Hartford in having Dr. A. C. Heublein, who has a considerable quantity and is using it for the treatment of such cases. In cases of that kind physicians can obtain the benefit of that treatment here in the city.

DR. JOHN E. LANE (New Haven): I do not wish to prolong this discussion but I must assure Dr. Carmalt that I have not forgotten his teaching that there is a difference between carcinoma and sarcoma. I am also aware of the fact that the words cancer and carcinoma are etymologically synonyms. Nevertheless cancer has for a long time been used by many competent pathologists to include all malignant tumors which grow rapidly and have a tendency to become generalized, while carcinoma is applied only to such growths whose origin is epithelial.

Moreover if Dr. Carmalt insists that these words be used synonymously I do not need to remind him that the growths to which he refers, those arising from pigmented moles, are by no means universally classified as sarcomata. They are, to be sure, most frequently referred to as melanotic sarcomata, but if the investigations of Gilchrist, Waelsch, Whitfield, Darier and other pathologists are correct, both the cells in the pigmented moles which give rise to the melanotic tumors and the tumors themselves are epithelial in origin and therefore the tumors must be classed as carcinomata.

In a paper of this sort it was impossible to take up a discussion of this question.

Colony Treatment of Epileptics in Connecticut.

DONALD L. ROSS, M.D., MANSFIELD DEPOT.

Although epilepsy is a disease that has been recognized since ancient times and is a common disease, almost as common as insanity, averaging from 1 to 350 to 1 to 500 of the population, it was not till 1867 that the first attempt at special care for epileptics in special institutions was attempted. This was at the Bethel Colony in Bielefeld in Western Germany. This colony was founded by Pastor Von Bodelschwinde. It was started in a very small way but later became a very large institution. From this beginning the scheme was later adopted in several countries. In England the first colony was established in 1888. In the United States the first colony was established at Gallipolis, Ohio, in 1892. Since that time several states have adopted the scheme. At the present time twelve states have established or are establishing institutions specially for epileptics.

A few states have combined the care of the feeble-minded and the epileptic in the same institution; in others there are no special institutions, and in such states epileptics that cannot be cared for at their homes are placed in institutions for the insane or in alms houses. In some of the states all classes of epileptics are cared for in the special colony, but in most of the states establishing colonies the original plan has been to care only for the better class mentally, leaving out the class showing much feeble-mindedness and also the class exhibiting marked symptoms of insanity and especially those that become very violent and troublesome.

The following is a list of the states that have established special institutions for the care of epileptics:

Ohio—The Ohio Hospital for Epileptics, opened in 1892.

New York—Craig Colony for Epileptics, opened in 1896.

Massachusetts—Monson State Hospital, opened in 1898.

New Jersey—The New Jersey State Village for Epileptics, opened 1898.

Kansas—Parsons State Hospital for Epileptics, opened 1903.

Texas—State Epileptic Colony, opened 1903.

Indiana—Indiana Village for Epileptics, opened 1905.

Virginia—Virginia State Epileptic Colony, opened 1910.

Connecticut—Connecticut Colony for Epileptics, opened 1914.

Iowa—Not opened.

Illinois—State Colony for Epileptics, not opened.

Michigan—Michigan Farm Colony for Epileptics, not opened.

In Minnesota, Missouri, and Michigan institutions combining the care of feeble-minded and epileptic are in existence, but the one in Michigan is now divided, all the epileptics going to a new institution as soon as it is ready to receive them. In Alabama an act was passed in the legislature establishing an institution for epileptics, but as no money was appropriated for the purpose no progress could be made.

In New York a second institution has been opened, the Letchworth Village, which combines the care of the feeble-minded and epileptic in the same institution.

Pennsylvania and Missouri have private institutions for the care of epileptics.

Many epileptics present very distressing symptoms. Almost all epileptics show mental deterioration of a greater or less degree; very many show much mental deterioration, showing conditions that cannot be differentiated from extreme idiocy. In many epileptics the disease has followed infantile palsies [hemiplegia, and paraplegia], and many epileptics have periods when active symptoms of insanity are present. Most epileptics have periods of extreme irritability. The condition is often most distressing. An epileptic is a source of almost constant care, his presence is objectionable almost everywhere, in school, church, on the street. He, as a rule, is unable to secure work, is an object of ostracism under almost all circumstances. Surely there is no greater charity than providing a proper place for them, a place where they at least can feel they have a right to be and where they are as good as the other fellow. When all the facts are considered I think that colonies, large enough to care for all that might seek admission, should be provided as soon as possible. Epileptics are often dangerous to themselves and

others, and for this reason require much care and supervision—from the violent falls many injuries are received, many of which are very severe. Sudden death is not uncommon.

It is a well-established fact that most epileptics are much improved on entering a special colony, both mentally and physically. As heredity plays such a prominent part in the history of epilepsy, the segregation of these patients in colonies ought in time to have a direct influence in the number of epileptics. Although Connecticut has a law preventing an epileptic from marrying, still it is not enforced.

The subject of epilepsy, apparently, is not one that interests the medical profession very greatly. I think most physicians do not care to treat epileptics. On looking over the files of the proceedings of the Connecticut State Medical Society I find that only one paper on the subject of epilepsy was read before this society in the first hundred years—"Importance of the Early Recognition of Epilepsy," read by Dr. E. C. Seguin of New York. I think this lack of interest on the part of the profession is probably more apparent than real. The results of treatment are not very encouraging and our knowledge of the disease is not very great. The organization of colonies should stimulate those connected with them to greater efforts to understand the disease more fully. A laboratory for research should be a part of every colony.

The establishment of the Connecticut Colony for Epileptics has been accomplished at the expense of a great deal of work and thought. Much of this work was accomplished through the efforts of this Society and a review of this at this time is, I think, very appropriate.

The first public move for the establishment of an institution for the special care of epileptics in Connecticut was made in the reports of the Connecticut State Board of Charities to the Legislature for the years 1897, 1898, 1899, and 1900, when recommendations were made "for the establishment of a separate institution for epileptics upon the colony or village plan," but it was not until a considerably later period that the legislature took any definite action.

The next move recorded, following the recommendations of the State Board of Charities, was the appointment in July, 1900, of a committee, by Dr. Leonard B. Almy, then President of this Society, on request of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics; this committee to ascertain the number and condition of epileptics under public care in the various institutions in the state and also procure such information as is obtainable respecting the number of epileptics not under institutional care. This committee consisted of Drs. Max Mailhouse, Edwin A. Down, and Frank K. Hallock. The work accomplished by this committee was most valuable, much information was obtained and I think it may well be claimed that this report was the real foundation on which the Colony was later established. The report of this committee was placed before the State Medical Society May, 1901, and appears in full in the Proceedings of the Society for that year, page 25. Committee was continued and especially requested to suggest some method providing for the care of epileptics and its second report was published in the Proceedings of this Society for 1902, page 35. At this time the committee was not discharged, but no definite action was taken until the meeting of this Society in 1904.

In 1904, Dr. Max Mailhouse of New Haven, and chairman of the above committee, read a paper entitled, "Should Connecticut Establish a Colony for Epileptics" (page 300, Proceedings of 1904)? After the reading of this paper a resolution was passed by this Society that a committee of three be appointed by the chair, one of whom shall be the President of the Society, to present to the incoming Governor of the State a copy of this paper together with copies of the committee's reports referred to (Reports of 1901 and 1902) and such arguments and facts as the committee see fit. The committee appointed consisted of Drs. Carmalt, A. R. Diefendorf, and Max Mailhouse. This committee presented the matter to Governor Roberts as directed and the Governor viewed the matter with such favor that it was referred to in his message to the General Assembly in 1905. A bill was drafted by the committee on legislation for presentation

to the Assembly, but was not followed up because of the appearance of another bill having the same object, but wider in scope, introduced by a layman interested in the matter, Hon. Morris C. Webster, present Comptroller of State. At the annual meeting of this Society in 1905 Drs. Mailhouse, Diefendorf, Down, and Hallock, with the President of the Society, were appointed a special committee to confer with the committee of the Society on Public Policy and Legislation and to continue to advocate such measures before the State Legislature until a colony is finally established. These committees, together with members of this Society who were members of the House and Senate, more particularly Dr. William L. Higgins of South Coventry, secured the passage of the following resolution by the General Assembly of 1905:

Resolved—That there shall be appointed by the Governor in July, 1905, a committee of three persons who shall investigate methods for cure and treatment of persons resident in this state who are affected with epilepsy in any of its forms and conditions and report to the General Assembly at its January Session, 1907, the result of such investigation together with what is deemed by said committee to be the most practical plan to be adopted for such care and treatment by the state as shall secure the most humane and curative results.

In accordance with the above resolution Governor Henry Roberts, on July 31, 1905, appointed Drs. Mailhouse of New Haven, Edwin A. Down of Hartford, and Frank K. Hallock of Cromwell, as members of this committee. A copy of the report of this committee to the General Assembly in 1907 is printed on page 58 of the Proceedings of this Society for 1907.

Following this report to the General Assembly in 1907 a bill for the establishment of a colony for epileptics was recommended by the Legislative Committee on Humane Institutions, but the Committee on Appropriations failed to make a recommendation beyond that of laying the matter over to the next General Assembly without comment. The committees appointed by this Society were continued and kept up vigorous work and were rewarded in 1909 by having the General Assembly of that year pass an act establishing a colony for epileptics, Chapter 207, Public Acts 1909, an act providing for the establishment of a

Colony for Epileptics. Section 1 of this act says, "There shall be established within this state a Colony for Epileptics, the object of which shall be the scientific treatment, education, employment, and custody of epileptics, and which shall be known as the Connecticut Colony for Epileptics.

Twenty-five thousand dollars was appropriated for the purchase of a site and the Governor was instructed to appoint a commission of three persons to purchase a site. Dr. Max Mailhouse, Hon. Lyman T. Tingier of Rockville, and Dr. William L. Higgins of South Coventry were appointed members of this commission. After examining many proposed sites, land was purchased for a site in the Town of Mansfield, County of Tolland, near Mansfield Depot, on the Central Vermont R. R., nine miles north of Willimantic, and in September, 1910, the first Board of Trustees was appointed by the Governor, eight in number, one from each county. On this Board of Trustees were included three members of this Society, Dr. Mailhouse of New Haven, Dr. Higgins of South Coventry, and Dr. Mountain of Middletown. Active operations were at once begun by this Board of Trustees to carry out the enactment of the Legislature. A superintendent was appointed January, 1911, and plans were developed for buildings, etc. Much work had to be done, money was appropriated by the Legislature of 1911, which became available after October 1, 1911, architects were obtained, and as soon as possible active building operations were commenced in the spring of 1912, but it was not until May 15, 1914, that the first patients were admitted. During this time it was necessary to make arrangements for power, heating, and lighting, for water supply, for disposal of sewerage, for building a spur track, etc. While the present capacity of the institution is small, only 40 of each sex, it is hoped that money will in time be appropriated to provide room for all the epileptics in the state that would seek admission, room for at least 500 in the next few years. The act establishing the Colony states that "hopeful cases shall have preference as to admission and in no instance shall a hopelessly or violently insane person be admitted." Patients to be admitted under commitment of the Probate Courts in a similar manner to commitment of the insane.

The Board of Trustees have decided, until means of classification shall be much improved, that patients under age of ten will not be admitted. Owing to the great demand for admission of idiot and very feeble-minded epileptics the Board of Trustees decided that proper arrangements for caring for this class will be first provided and it is hoped that the Legislature will not long delay in appropriating money to carry out this purpose. It is very urgent that means for caring for this class should be provided. These patients are the hardest class of patients, not even excluding the insane, to care for and the homes should be relieved of all such cases. It is hoped that this Society will continue the good work, in further developing the Colony, it did in helping to establish this Colony. The State ought to provide room for every epileptic that might desire admission, every one that would enter as a voluntary patient as well as those that would be admitted on order of the Probate Courts. I believe also that the State should assume the entire cost of the maintenance of all patients over and above what can be obtained for the patients or their friends. As long as the towns have to contribute at the rate of \$2.00 a week for all pauper patients many patients will have to remain out of the institution that should be kept in the institution. Very few pauper patients will be committed if such patients can be cared for outside at less expense and trouble.

The Colony as now constituted has a capacity of eighty with a census of seventy-eight, consists of about 500 acres of land, some of which is excellent farming land, and those of the patients who are able to do so help in the farming operations.

It is hoped that later means will be provided for establishing a laboratory in connection with the institution for special research work, the advantage of which I need not discuss before you.

DISCUSSION.

DR. EDWIN A. DOWN (Hartford): Reference having been made to the part played by the State Board of Charities in the establishment of the colony for epileptics in this state, a brief sketch of the work of the board in this direction may be appropriately inserted at this time.

This board, like similar boards in other states, has acted the rôle of a John the Baptist crying in the legislative wilderness in order to prepare the way for the work of the committees subsequently appointed; and it is with some degree of satisfaction that the board has realized the aims and purposes of its members, which have been in evidence during the past fifteen years.

By virtue of my having been a member of a committee on epilepsy appointed by the State Medical Society, and later, on a special committee appointed by the legislature, I am permitted to portray, at this time, some features connected with the problem of the care and treatment of the epileptic class in Connecticut.

Full credit must be given to both the state board and the State Medical Society, and in the course of my remarks it will be my aim to omit the offensive pronouns which disfigure many creditable papers.

Our State Colony at Mansfield has accommodations for less than one hundred persons; and it is evident that the treatment of the epileptic in Connecticut must remain in the hands of the general practitioner and specialist for many years to come. With an epileptic population of between three and four thousand within our borders, it is not difficult to understand that this must inevitably be so.

I was requested to say something concerning the treatment of epilepsy, and as Dr. Ross has given such a full and lucid history of the institution up to the present time, the few remaining moments will be devoted to the review of a few of the multitudes of "remedies" and "cures" which are in use, or exploited for commercial advantage.

This interesting and perplexing disorder has always been invested with more or less notoriety, owing to the spectacular character of the symptoms presented, their sudden onset and rapid subsidence, which place it in a class by itself. Doubtless every physician has his pet formulæ which he has found most useful in cases coming under his care, but no sane individual would attempt to catalogue the many methods and agencies employed in the attempt to relieve the distressing symptoms which this disorder presents. In treating these cases, we have to consider the special features which appeal to us as essential in prescribing.

Taking the point of view of those who consider the vaso-constrictor element as the one to be treated, we run over in our minds, and prescribe, some of the vaso-dilators, as nitro-glycerin, potassium nitrite, amyl nitrite and others, according to the judgment of the prescriber.

The vaso-dilator advocates see the necessity for reducing the blood supply to the higher centers, and call to their aid the preparations of ergot, adrenalin, hydrastin, and, recently, pituitrin. All of the foregoing are used coincidentally with the bromides in small amounts.

Cardiac stimulants seem indicated in some cases, and digitalis, strophanthus, atropine, and various alcoholic preparations are resorted to in

order to keep the heart in an adequate working condition. For sedative and anti-spasmodic action, camphor, opium, hyoscine and others are employed;—the last named used with caution.

In this era of vaccine therapy, every practicing physician receives a liberal supply of literature respecting the merits of the preparation to which his attention is directed. We may speak on one or two of these on account of the widespread publication of testimonials touching their value in the treatment of epilepsy.

Rattlesnake venom appears to have some influence over the convulsive seizures; but the effects are not permanent; and while the claim is made that the mental condition is clearer, we must not forget that this often happens whenever the bromides are withdrawn, whether a substitute is given or not. Improvement is commonly noted when any change in the treatment is made; and I am inclined to the belief that it is this alteration in the treatment, and not the particular remedy given, which affords the temporary relief.

Syphilitic suspects should be given a few grains of the iodides, with the bromides; and good results often follow. Calcium lactate is a very useful agent in most cases; and will diminish the number of seizures, besides forestalling the disfiguring eruption so evident in many cases.

Oxalic acid I have used in many cases, but cannot recommend its use. Iron, in some form, should be given when the bromides are exhibited. Preparations of solanum are very useful in mild cases, and can be alternated with the bromides with profit.

Surgery has its inspirations, and in imagination beholds the clot, the adhesion, the new growth, the too early ossification of the cranial bones; perhaps fluid pressure or something undefinable which requires mechanical adjustment.

Bilateral division of the cervical sympathetic was looked upon as being a solution of the problem of the treatment of epilepsy; but the results have been far from encouraging; and the bromides are still with us.

It is a noteworthy fact that during an acute febrile process in an epileptic, the convulsive seizures are, for the time being, in abeyance. Several of my cases were victims of pneumonia; and the return of the convulsions was deferred longer than in cases of measles or scarlatina, or even a simple coryza.

This phase of our subject affords an opportunity for some investigator to discover the particular toxine or germ responsible for calling a halt on the convulsions, and direct his efforts toward developing an effective "anti."

In a closing paragraph let me state that within a few years some attention has been attracted to the psycho-therapeutic treatment of the epileptic. The field for this form of treatment must, necessarily, be limited; but some cases, chiefly of the neurasthenic type, are reported to have received

some assistance. So much for words; perhaps barren of ideas. But an experience with epileptics covering a period of twenty-five years may serve to justify the committee in placing my name upon the programme.

DR. MAX MAILHOUSE (New Haven): One of the questions raised by the consideration of this matter is: Shall the state assume a like burden in caring for the epileptic to that it assumes for the insane? A sufficient reply may be inferred from the fact that a colony is already in operation. This must be qualified, however, by the fact that for the present not only has material for the further development of this institution been denied, but urgent needs have been given no attention by the General Assembly.

It might also be said that the need for such an institution is greater than that for the insane from this one point of view at least: that the dangers to the epileptic, to the family, and to the state are greater because the disease is so often masked, while on the other hand the mental alienation in the insane is almost always apparent to any layman and proper heed may be taken.

I would like at this time to call attention to the fact that the name epilepsy (as we have found in the past with many other diseases) is a misnomer and should be replaced by the term "The Epilepsies." There are so many diverse pathological conditions which produce the epileptic syndrome that, taking away the cases giving actual macroscopic findings within the cranium, there will be left but a small percentage of cases which can be placed within the pure so-called idiopathic group. And it is my opinion that this latter group will ultimately be found to bear a similar relation to the general group that dementia præcox has acquired to the general group of insanities; that is to say, given an hereditary predisposition, there is an inherent incapacity of the individual to adapt himself to his environment at the periods of great stress in life, namely, pubescence and adolescence, and that he falls, either exhibiting the symptoms of præcox or those of so-called idiopathic epilepsy.

It is for this reason that the need for a pathological laboratory becomes imperative. One of the reasons given for the establishment of the colony was that of the scientific treatment of the disease; to this end an exact knowledge of its pathological conditions is essential and this can only be acquired in a properly equipped laboratory. And it becomes the duty of the members of this association, which first brought home to the state the necessity and advisability of the founding of the colony, to see to it that the scientific study of these diseases be promoted by every honorable means.

DR. J. F. CALEF (Middletown): I would like to say that I consider that paper a very interesting and very important historical document. It has brought down the history of this matter and has brought to the atten-

tion of all that the Connecticut Medical Society has been the main instrument in bringing this about. I think that we ought to continue in our efforts to push it to its ultimate conclusion.

I want to specially emphasize the advantages of the scientific study of epilepsy in a colony like this and to insist that a proper laboratory is of the first necessity, that is a laboratory which shall be equipped to begin the study in embryology. At the last meeting of the Middlesex County Medical Society I had the honor to present a preliminary report of some of my own clinical and experimental studies of epilepsy that had been going on for the last fifteen years and it led me into strange paths and into the study of the secretions of the ductless glands. It seems to me that we have proven that a lack of balance in the secretions of the ductless glands is the cause of sensitizing the individual to this class of diseases. I would include in this class of diseases epilepsy, migraine, and certain types of periodic dipsomania. I say certain types of periodic dipsomania. And I believe it is these several diseases and perhaps other nervous diseases which are not now fully understood that are due to this intrauterine, or shortly after birth, lack of balance of the secretions of the ductless glands, and in that connection I was called upon to make some investigation of the development of some of the ductless glands, especially the thyroid and pituitary bodies, and to verify some of the experiments which were made by Loeb and others in feeding to tadpoles the thyroid body and noting the immediate increase of development, that the tadpoles fed on thyroid would immediately proceed to develop legs and to rush through the processes of development much faster than those that were not so fed. That leads to a preliminary study which is not yet by any means completed of the effect on a tadpole of similar treatment with the pituitary glands, and the differentiation between the anterior and the posterior lobe action on the tadpole. While it is not yet advanced enough to be in any way certain, yet I am strongly of the opinion that the tadpole will be found to develop much more rapidly with the pituitary than he was with the thyroid, and in connection with this embryological study is of value because if we follow the development of the foetus in utero we will find that the growth of the foetus jumps rapidly as soon as the pituitary body has become developed so as to be an internal secreting gland and discharges its secretion into the blood supply. That coincident with that enfolding of the glands, the growth both in height and weight of the foetus causes enormous jumps, showing that it sensitizes metabolism and makes the growth particularly active. And if we follow up another series of ductless glands which jump into great activity at the time of puberty we find that that is also the case, that the bodily growth is increased, that the hair growth is then very much increased, and certain other things which show that at that time again the human being takes on an unusual push forward in his existence, and then by studying the cases of epilepsy

and their origin we find that the largest number of epileptic cases will develop in the first year of extra uterine growth and along at the time of puberty there is another large chance of epilepsy development. That is merely the motive power, the sensitizing, as I apprehend.

The cause of any particular paroxysm in my judgment is divided, and in a clinical study I think we will find that an approaching paroxysm of epilepsy or migraine or alcoholic outbreak can be predicted several hours or days before if one understands the status of autointoxication. Acting on the person who in infancy or puberty was sensitized on the side of the motor nerve gives epileptic paroxysms, on the side of the sensory nerve develops migraine, and on the side of the nerve controlling the will which we don't know, will develop these periodic attacks of alcoholism.

DR. FRANK H. BARNES (Stamford): I am very glad to have heard the paper. I think we are on the right track in having a state colony for epileptics. One of the things that seem to me notable in this matter is the idea of segregation of the different sexes to different buildings and also the proper classifying of these cases. In some institutions I don't believe, from what I have learned and what I have seen, that the idea is carried out. It seems to me that the excitable cases of grand mal are a bad proposition to have around minor cases. The outdoor life of the colony is to me the great thing in the treatment of these cases. As far as any medication is concerned I haven't found anything as efficacious as bromide in small doses. I think some of us give too much. Bromide should be given in five or ten grains for a time and then stopped for two weeks so as not to get the bromide rash.

The colony idea is the proper idea and I hope we shall be able to get more money for Dr. Ross for his institution. Also that he will get the laboratory he asks for.

These cases are a peculiar proposition in themselves. The study of epilepsy in the child is something that is potent. It is peculiar that many of these cases develop epilepsy at an early age, one or two years, and run along having attacks until they are ten or twelve years old, when the attacks suddenly cease and the patient is well for all time. It is also strange that many develop the disease at from fifteen to seventeen years of age or perhaps later without any apparent trauma or lesion. The question of diet seems to me all important. The diet should be no meat, potato, starches or sugar; plenty of milk, fruit, eggs and fish. The patient will have less seizures on a meat free diet. At the same time I have found it is best to keep the bowels freely open, my idea being that when patients are about to have a succession of attacks they can be obviated by proper elimination.

DR. DONALD L. ROSS (Mansfield Depot): I haven't much further to say excepting that the object of the paper is to interest this society. We may require assistance later from this society in getting money from the legislature for a laboratory, but I hope that not over seventeen years will elapse from the time of the suggestion till we get a laboratory. We have at present a small laboratory but we are unable to do special work.

In reference to the cause of epilepsy, especially with reference to the ductless glands, I will say there is a great deal of work being done at this time along that line. At the National Association for the study of epilepsy which was held last week most of the discussions and papers were directed along that line, especially the effect of the pituitary glands. Whether they are going to find anything there or not is a question. As regards the treatment I don't think there is anything in the whole catalogue but what has been used in the treatment of epilepsy and almost all drugs have been found efficacious at times. We all know that in treating an epileptic that any new treatment always has a good effect for a time. It seems to have a certain effect, no matter what is given him. He is apparently benefited for a time; so it takes an awful lot of investigation, I think more than any other disease, to know what effect we are really having from the drug itself.

The Anatomical Method in the Diagnosis of Cancer of the Breast.

HENRY C. RUSS, M.D., HARTFORD.

The changes which have taken place in the theory and practice of medicine and the sciences allied thereto in the last fifty years have been enormous. At the meetings of almost any local medical society it is not unusual to hear some one of the older members emphasize the difference between the practice of to-day and that which obtained at the beginning of his career. It was only recently that one of the best known members of the Hartford Medical Society jocularly remarked that when he graduated there were only three diseases known to medicine: lung fever, which included anything which took place between the neck and the diaphragm; inflammation of the bowels, which stood for anything which happened between the diaphragm and the testicle; and rheumatism, embracing any condition manifesting itself by aches and pains more or less indefinitely located in the trunk or extremities. In our day we think our children have been remiss in their primary education if they are not familiar with many more "-omas" and "itis-es" than these. Many of us have doubtless laughed at the words Edmund Vance Cooke¹ puts in the mouth of the "Little Tot," which I venture to quote here:

"Deer Teecher

Father said there's no doubt
Ide learned all there was to kno about
Common worms and things but he rather thot
Backteary might learn me qite a lot
So please won't you learn us all about jermes
Mikekrobes and bassilly and other worms,
So we can be bizzily kept emplroid
And scool life wont seem a acking voyd

Basilly is what gits in your lungs
And they aint got stummicks or teeth or tungs
But they eat till your lungs is gone and so

You aint got enny breth left to blow.
Trikinny gets into sossidge meat
And then into yours And they eat and eat
Till your mussels is all so et and sore
You cant even chin yourself no more

I love the study of bugs and worms
But I hope youl learn us more about jermes
For they aint no use that I can see
Except to be studded by skollers like me
They swim in the milk and give you things
They fly in the air without no wings
They lite on your skin and you get the itch
Your lovving skoller

WILIE N. RICH."

"Wilie N. Rich" is evidently going to be an up-to-date boy!

It is not for us to assert that all these changes are in the nature of something really new. It behooves men always to keep before their minds the words of the wise old philosopher²: "Whatsoever hath been, the name thereof was given long ago . . . for who knoweth what is good for a man in his life? Surely this also is vanity!" It is for future generations, not us, to mark those factors which are real steps in the progress of medical knowledge, and those other factors which are only variations, not destined to be seized upon by natural selection in the process of medical evolution.

But even if we find our own perspective too narrow to discriminate accurately the worth of the varying leaves from this tree of life, yet some of its branches at least are large enough and strong enough absolutely to convince us of their abiding worth. Among these sturdy branches, it is fair to assume, may be placed that which represents an appeal which has gone forth in so many places to the medical world, namely: "Make an accurate diagnosis," or better: "Make an accurate *early* diagnosis." Perhaps in respect to no other condition has this cry been raised with more justifiable emphasis than to conditions involving the possible presence of malignant disease. It is hardly necessary to elaborate this point. As soon as we understand the structural nature of the lesion of malignant disease,

and as soon as we assume the origin of the lesion to be primarily a single diseased cell, or at most a single diseased group of cells, the possibility of complete eradication by early operation follows mathematically and as a matter of absolute logic, not empiricism. Just as certainly the probability of incomplete eradication by operation varies directly with the length of time the diseased cells are allowed to multiply and spread before such operation.

It is fortunate that the facts do lend themselves to such definite deductions, for the appeal for an accurate early diagnosis can then be made with force not only to trained minds but to laymen in general—an obvious necessity if any results are to follow. It is undoubtedly true that in late years patients are increasingly ready to put the responsibility for an accurate early diagnosis of malignant disease upon the shoulders of the doctors—the place where it belongs; though that is not saying that our shoulders are yet broad enough to carry it without a slip!

The question then arises: What means does the surgeon now possess to make an accurate early diagnosis once the patient presents himself? Much of the discussion which here follows might be applied to the diagnosis of malignant disease in various parts of the body. It seems more profitable, however, to limit our thought as suggested by the title, to the problem as related to cancer of the breast. What, then, are the means at the disposal of the surgeon for the diagnosis of lesions of the breast, more particularly the differential diagnosis between benign and malignant lesions of the breast?

These means may be broadly divided into (*a*) clinical and (*b*) laboratory. The clinical diagnosis—history, symptoms, physical signs—is well known to all. But here again the clearness with which this evidence can be interpreted varies greatly. The manifestation of clinical signs which can definitely discriminate between a benign and a malignant lesion varies directly with the age of the disease, as a rule. It is notoriously difficult, often impossible, to distinguish by clinical evidence alone between the benign and the malignant growth. I may even say that in the vast majority of cases when such differentiation can be made the growth is no longer an early one, anatomically.

The laboratory aids to diagnosis, as in many other conditions, are of several varieties. Despite the extremely suggestive and unusual work of Rous at the Rockefeller Institute, it is not by any means an accepted fact as yet that malignant tumors are of parasitic origin; much less has any organism been found to be the causal agent. Therefore the laboratory cannot make use here of any such bacteriological demonstration as in the diagnosis of tuberculosis, typhoid, diphtheria, or other known bacterial infection.

In the second place, the attempt to demonstrate the presence of abnormal metabolic or immune bodies in the blood serum, urine or other body fluids, which may be characteristic of the presence of cancer, has met with very little definite success. For example, the meiostigmin reaction,³ complement-fixation tests, or the demonstration of special ferments by the Abderhalden dialysation technic, all have their adherents. None of these tests, however, have proven reliable in the hands of the majority of laboratory workers. Indeed, some of the keenest minds among to-day's investigators believe that it is logically wrong to think of immune bodies developing as a result of the presence of malignant tumor cells. The various immune bodies are results of the reaction of normal cells to the stimulus of something distinctly foreign to the body. The cells of a malignant tumor are derived primarily from the same cells as are the surrounding normal cells, and although endowed with extraordinary potentialities in vitality, growth and proliferation, yet histogenetically and phylogenetically they are identical with the normal, and can hardly be considered foreign.

Numerous other less well-known tests for cancer have appeared in the literature, as for instance, Elsberg's skin test, the iodine color test in the urine; precipitin tests, the epiphanin reaction, etc.⁴ All are generally pronounced of very doubtful efficiency. If, then, the clinical diagnosis of early cancer of the breast is often impossible, and laboratory methods which depend upon the demonstration either of an etiological factor or specific substances in the body fluids fail so utterly, we are finally brought to the last and most accurate means of diagnosis at our disposal,

namely: the anatomical study of the lesion itself. In the case of a breast tumor this of course necessitates an exploratory operation, which can be done very easily under gas-oxygen anesthesia. Bloodgood⁵ summarizes this by the statement: ". . . in regard to tumor formations, the earlier they come to the attention of the surgeon, the more frequently is an exploratory incision absolutely necessary."

Assuming that we all agree with this conclusion, at least for the purpose of further discussion, let us proceed to a brief inquiry into the anatomical methods of diagnosis, their nature, their value and efficiency and their difficulties and limitations.

But first of all it is necessary to consider the factor of time in relation to the making of the diagnosis. In the ordinary study of pathological material, obtained either at operation or post-mortem, the pathologist takes hours or even days before he considers the study of a given specimen complete. He is able to study the mass in its entirety as related to surrounding structures; he has time to incise the specimen in all directions and examine at length not only the lesion itself but all possible suspicious areas in the whole specimen; and finally to study the cellular structure of any and all such areas by means of sections prepared for the microscope by methods requiring days, perhaps, for their satisfactory completion. It is quite the reverse in the case under discussion. Bloodgood⁵ ten years ago was already emphasizing the fact that it is unjustifiable at the exploratory incision to cut out a piece of tissue and wait for ordinary microscopic examination, because of the danger of mechanically transplanting malignant cells which may be disseminated far during the period of waiting. More recently⁶ he has elaborated this view, even showing statistically a definitely higher mortality from malignant growths subjected thus to a two-stage operation. The examination by the pathologist must then be very quick, and the surgeon prepared to do a radical operation at once should malignancy be found.

The data for making an anatomical diagnosis at exploration are derived in two ways. First, from the gross appearance. The naked-eye appearance of the excised lesion, its consistency

and its relations to the normal tissues around, are sufficiently characteristic in a large number of instances to make an accurate and almost instantaneous diagnosis. It is not my purpose here to enter into a detailed description of the differential points to be noted in the naked-eye study of breast lesions. Suffice it to say, it is essential that the surgeon or pathologist have an eye and touch trained by large experience with the lesions, for no amount of reading can take the place of this. It seems astonishing how few surgeons feel the need of training themselves to make an accurate anatomical diagnosis by simple inspection and palpation of an excised tumor mass. How often a specimen is received at the laboratory without even being excised! Yet fair accuracy in the interpretation of the data of gross pathology thus obtained is nothing which demands the time or training of a specialist.

Second, the microscopical structure. The study of gross pathology and its bearing on clinical medicine has systematically grown and developed for the last two hundred years, ever since Morgagni⁷ lectured and wrote. Perhaps sixty years would nearly measure the period in which the importance of cellular or histological pathological anatomy has been recognized both as a help in the study into the nature of disease and as a more accurate means toward the recognition and diagnosis of given anatomical lesions. Yet who is there now who would think of describing a pathological specimen and considering it complete without including a description of its histological structure? Does this hold true also when it comes to the rapid diagnosis necessary for a specimen obtained at exploration, while the patient is kept under the anesthetic to await the report? This is equivalent to asking the value of diagnosis by frozen section, for by this method alone can sections for the microscope be prepared in a sufficiently short space of time. A note on the technic employed in making frozen sections will follow at the end of this paper. However, it may be said here, parenthetically, that while ten to fifteen minutes was considered quick time in which to produce a good section, this has now been reduced to five, three, and by some to even less time.

The efficiency of frozen sections as an aid in quick diagnosis seems to be a matter of rather divergent opinion among leading surgeons. Let me cite one or two of these. Bloodgood⁵ in 1906 states that when it is difficult or impossible to make a diagnosis with the naked eye, frozen sections offer no better clue, in his experience. In 1913⁸ he takes essentially the same position. Ochsner⁹ of Chicago believes the method inaccurate and will soon be in the museum of distrusted and discarded fads. Mayo¹⁰ says:

"By aid of the microscope and frozen sections the surgeon's vision has been extended into the minute structures of the processes of disease during the progress of the operation. This innovation in surgical pathology is of the greatest importance since it enables the surgeon to be guided by the microscopic as well as the macroscopic aspects of the condition."

Wilson¹¹ says:

"An accurate microscopic diagnosis of the presence or absence of carcinoma should invariably be made while the operation is in progress. Every hospital in which operations on tumors are done should have a laboratory as well as an operating room, and a trained pathologist as well as a trained surgeon.

In early carcinomas, which are the only hopeful cases, the surgeon must be guided as to the extent of his operation by the report of the pathologist's microscopic examination. Naked eye appearances of seemingly innocent growths are often deceptive."

Foote¹² of the New York Cancer Hospital makes similar statements, and recently Rodman¹³ of Philadelphia goes so far as to say that the *only* rational procedure in doubtful cases is to remove all of the tumor and submit it to the pathologist who is present, who will furnish an immediate report after making frozen sections.

These are only examples taken from among the opinions of many who have used the method. The truth probably lies somewhere between the two extremes here mentioned. It certainly is too much to say that the microscope, and the microscope alone, is capable of giving accurate information; it is equally wide of the mark to claim that the frozen section never reveals what is not apparent to the naked eye. It is probably true that gross

appearance and consistency enable the pathologist to recognize almost all the solid carcinomatous masses, but the early malignant changes which begin in the wall of a cystic tumor or in the more diffuse lesions of chronic hypertrophy and chronic inflammations are much more obscure.

It must always be remembered that not infrequently through the influence of focal necrosis or secondary infection a small carcinomatous nodule may present many atypical features. In such a case the pathologist may be willing to make a presumptive diagnosis of carcinoma, but a glance at a frozen section would make the matter certain. In a certain sense this recalls making a diagnosis of hydrothorax by percussion and auscultation; the paracentesis needle is often necessary to turn probability into certainty. Those who claim that gross appearances are always amply sufficient may be surgical pathologists of unusual ability and experience; they forget that the rank and file may feel a reasonable doubt about findings which to them are clear and decisive. In cases like this the frozen section often gives such easy and rapidly obtained aid as to put the opinion of the surgeon with less opportunity on a plane with his more fortunate brother of the large clinic. The need of employing frozen sections ought to increase as time goes on and tumors come under observation increasingly early in their life history. In studying the records of our own short series we find that in the last 103 breast operations at the Charter Oak Hospital, frozen sections were made in forty-three, or 41.7 per cent. Of these forty-three, twenty-two or 51.2 per cent. were made to corroborate diagnoses to which the pathologist had already committed himself definitely on the gross appearance alone. On the other hand there were twenty-one cases, which is equivalent to 48.8 per cent. of the frozen sections made or 20.4 per cent. of all the breast operations, which were made because the diagnosis even after gross inspection of the lesion was still reasonably in doubt. It is also interesting to note that more than half of these twenty-one doubtful cases were either sections from cyst walls or cases of chronic mastitis, which here is understood to include the senile parenchymatous hypertrophies of Bloodgood.

It was not my intention to argue from what has been said that those who depend upon frozen section diagnosis have a method of mathematical accuracy even in the hands of its most efficient exponents. No method of diagnosis is perfect, and mistakes will sometimes occur after the patient has been afforded every possible means for the exact determination of her condition. I do want to make the claim, however, that if the surgeon is not prepared to avail himself of the aid of frozen sections he is bound to meet a not inconsiderable number of cases in which he will find himself unprepared to offer his patient all reasonable means for accurate diagnosis; nay, more,—all easy and simple means for accurate diagnosis.

It is well to mention the principal sources of error inherent in frozen section diagnosis. First: the tissue submitted to the pathologist may not include the actual lesion, in which case a study of this tissue is fruitless. This is a source of error inherent in the method of exploration, and not intrinsically in the histological part of it. Second: although the tissue may contain the essential lesion, the pathologist may choose a wrong site from which to make his section. This danger is emphasized when the lesion is very early and therefore very small, or when it is obscured by inflammatory conditions; and is also accentuated by the fact that time expended for gross dissection of the tissue mass must be reduced to a minimum. This is probably the most important intrinsic source of error and constitutes another reason why the pathologist should constantly strive to increase the accuracy of his knowledge of gross pathology. As a matter of fact, the danger to the patient arising from error of this kind is more academic than actual; for if the lesion is so small that a trained investigator finds it impossible to detect even a suspicious looking area, let alone to determine its nature, the chances are overwhelmingly in favor of the assumption that the whole process has already been completely removed, be it malignant or benign. Third: the structure of the section may be such that the pathologist cannot truthfully make an unqualified diagnosis, one way or the other. Too many surgeons, who possibly have had little personal acquaintance with histological methods, believe

that their assistants have only to glance through a microscope to see the correct diagnosis staring them in the face, as if written out in fiery letters. In reality, the pathologist's opinion must be based simply upon the shape and character of certain groups of cells and their relationship to the other cells and fibres around them. These relationships vary so little from the normal in certain cases that it would be difficult to come to an absolute conclusion even after prolonged and intensive study. The difficulty is of course increased when the time limit in frozen section work is taken into consideration. It will be seen from a study of these sources of error that they operate chiefly in cases where the frozen section has given negative findings in respect to malignancy.

Finally, let it be said, that recognizing certain difficulties as inevitable, they simply emphasize the fact that frozen sections are not infallible, while in the large majority of instances frozen sections still offer important and accurate aid in the diagnosis of tumors by exploratory operation.

SUMMARY AND CONCLUSIONS.

1. Progressive medical science now emphasizes the demand of an *early* differential diagnosis of malignant growths.

2. Clinical and the ordinary clinical laboratory methods of examination being insufficient, it is usually essential in early breast tumors to resort to exploration and direct examination of the lesion.

3. Gross inspection in many instances is amply sufficient for accurate diagnosis; there is, however, a considerable proportion of cases in which the microscope can be of very great, sometimes of essential, service.

4. In the interpretation of frozen sections, the surgeon should bear in mind that the method is not infallible, although, very fortunately, the sources of error can usually be successfully guarded against.

NOTE ON TECHNIC.

Very excellent microtomes especially designed for frozen section work can be obtained from the leading supply houses at a

cost of \$30 to \$50. Any laboratory which has a microtome can have a freezing stage made according to the plan of Rownesville¹⁴ at a cost little more than \$5. This is an entirely practical machine and gives excellent sections. There are also portable freezing microtomes, said to be quite satisfactory. Carbon dioxide gas is very efficient for freezing purposes; ethyl chloride is less satisfactory. The tissue for examination, cut not more than 5 mm. thick if possible, may be frozen in a few drops of water, salt solution, or better, some slightly viscous medium such as 10 per cent dextrin solution. If time permits, immersion in strong, hot formalin before freezing, even if it is but momentary, often results in better sections. Polychrome methylene blue is much used for staining. I have had excellent results with carbol thionin, as suggested by Strouse.¹⁵ This is a very good differential stain and possesses the additional advantage that the sections may be mounted and examined in the stain itself, thus saving time.¹⁶

REFERENCES

- ¹ Cooke: *Chronicles of the Little Tot*; Dodge Pub. Co., 1905.
- ² Ecc. VI; 10, 12.
- ³ *Journal of Infect. Diseases*; xii, 459.
- ⁴ Cf.: Elsberg; *Am. Journ. Med. Sc.*, 1910.
 Lisser & Bloomfield; *Bullet. Johns Hop. Hosp.* xxiii, 356.
 Siltenfelt: *N. Y. Med. Journ.* xcvi, 1016.
 Walker-Klein: *Postgraduate*, Aug. 1914.
- ⁵ Bloodgood: *Journ. A. M. A.* 1906, xlvii, 1470.
- ⁶ *Annals of Surgery*: 1913, lviii, 284.
- ⁷ Morgangi: "De Sedibus et Causis Morborum" 1761.
- ⁸ Bloodgood: *Journ. A. M. A.* 1913, lxi, 911. See also *Ann. of Surg.* 1913, lviii, 284.
- ⁹ See *Journ. A. M. A.* 1913, lxi, 915.
- ¹⁰ Mayo: *Collected Papers*, St. Mary's Hosp. Staff 1912, p. 717.
- ¹¹ Wilson: *Ibid.*, p. 725.
- ¹² Foote: *Am. Journ. Med. Sc.* 1913, cxlvi, 321.
- ¹³ Rodman: *Journ. A. M. A.* 1915, lxiv, 707.
- ¹⁴ Rownesville: *Yale Med. Journ.*, March 1910.
- ¹⁵ Strouse: *Journ. A. M. A.* 1910, liv, 1614.
- ¹⁶ Cf.: Wilson: *loc. cit.*
 Mallory & Wright: *Textbook on Pathological Technic.*

DISCUSSION.

DR. J. C. ROWLEY (Hartford): Dr. Russ's paper leaves very little to be said except to emphasize some of the points he has brought out. And the first of these is the importance of early diagnosis. We have been trying to educate the laity with the importance of coming to the physician early. Now it is up to the physician to send the patient to the surgeon early, not to observe the case to see what develops, but as soon as a tumor in the breast is discovered (a single tumor at any rate) see that it is immediately explored.

The next important fact is the statistics. Dr. Russ mentions the statistics of Dr. Bloodgood in regard to the two-stage operation, i. e. removing the tumor from the breast, having it sent to the laboratory and three or four days or maybe in a week, if the report comes back that the tumor is cancer, doing a complete operation. What are the results? These are the results of the cases he has seen. He says that the probability of cure when the breast cancer is clinically malignant and operable is about twenty-five per cent., provided immediate complete operation is done. In most cases in which the tumor was first removed from the breast and then later the complete operation for cancer was done, there have been no cures; among the cases in which the breast was first removed and then, several days after a microscopic examination the complete operation for cancer was made, there have been no cures.

In those cases clinically benign where the two-stage operation has been performed after the microscopical examination has shown that the tumor was cancer, only about ten per cent. have been cured.

But the cases we want most to get are the cases that are clinically benign. These cases operated on then, even though the tumor is found to be malignant, but the complete operation is immediately done, the probability of cure is about eighty per cent.

Now one or two practical points in making the diagnosis for the surgeon. Personally if I am called on to make a diagnosis I want the help of the frozen section in about one-third of the cases anyway. A pathologist of Bloodgood's ability would be able to tell a good deal more by the gross examination than some of us who have had less experience. Metastasis occurs in the first year after the signs are noticed. Adenoma carcinoma has little if any tendency to metastasise. The myxo-fibromas or the intercanalicular myxomas or the fibromas are always encapsulated, and the cancer is never encapsulated. Another thing of importance is the diagnosis of the tumors clinically. First the puckering of the skin, the atrophy of the skin above the tumor, are signs of the malignancy. The retraction of the nipple is pathognomic of cancer, and also the shortening of the side of the breast in which the nodule is located is of considerable importance as indicating cancer.

A discharge from the nipple is a sign of benign lesion. If the discharge is bloody it means an intra-cystic papillomatous growth. Blood in a smooth walled cyst is indicative of carcinoma. The presence of glands in the axilla is of very little importance. There are so many changes there that Bloodgood lays very little stress on them.

DR. CHARLES J. BARTLETT (New Haven): This subject which Dr. Russ has discussed in his paper appears to me to be of much importance and I am glad it has come up here in the presence of you who are doing the surgical work. I agree with both of the speakers that the two-stage operation offers less chance of recovery than single operations. It seems to me that it ought to be discouraged.

In the subject as presented it seems to me that there are two questions. The first is, What is the value of frozen sections to the pathologist? How much will it help him to make a diagnosis that he cannot make with the naked eye? The second and more important is, Of how much value is presence of the pathologist to the surgeon at the time of the operation?

In considering the first question, as to the value which the frozen section is to the pathologist, each of us has to go by his own experience. I will admit at once that it is of value at times. In the case of the last breast tumor which I had to examine, I should have been misled if I had not examined it by the frozen section method, but had relied upon the gross appearances only. It was a very early stage of cancer. I think that this case was a decided exception. As I look over my experience for the last twenty years in pathological work, I doubt if there have been more than one to five per cent. of the cases of suspected breast tumor in which I would have been misled by the gross appearance, as contrasted with the later microscopic appearance, whether made by frozen section or by the fixed tissue method later. When you come to consider the conditions which we have in the breast, first the cancer—and if Dr. Carmalt isn't here, I will include the sarcomas among the cancers—all the malignant growths on the one side, and then on the other side the fibromas including the intra-canalicular fibromas, and the adenomas, the cystic breast, and tuberculosis of the breast, each one of these has to the pathologist a distinctive appearance and it takes a very early stage of the process to be such that the pathologist cannot recognize it by the naked eye. I think the importance of the frozen section to the pathologist in order to reach a correct diagnosis has been rather over-estimated, at least in so far as my experience goes.

Now the other question is, Of how much importance is a man who is trained in pathology to the surgeon at the time of the operation? I think you will all agree with me, all of you who do surgical work, that it is the exception instead of the rule to have a surgeon skilled in pathology. I know a few who are. They are men of wide experience, men who have

made a special study of the appearances of the gross pathological lesions, but I have been surprised to see that the average man who is doing surgical work does not know in gross the appearance of pathological conditions. He cannot himself differentiate between benign tumors and malignant tumors oftentimes. Now it seems to me that this is the place where the pathologist can be of great assistance to the average surgeon. I think it should be left to the pathologist to determine whether a frozen section is necessary or not. He should be prepared to make one, but if he can make the diagnosis otherwise, he should be allowed to do so without the frozen section. And I think we will have much more accurate diagnosis when men who have been carefully trained in pathology are called upon for their aid at the time of the operation either upon tumors of the breast or upon those in other parts of the body.

DR. L. DUNCAN BULKLEY (New York City): There is a point which has not been alluded to, in connection with cancer, which I think should be thought of more; and that is in regard to handling or irritating a cancerous mass, for it is now recognized that the disease is spread thereby, and any possible cure is rendered more remote. Frozen sections may undoubtedly have some value for diagnostic purposes to those not well acquainted with cancer, but there is always the danger in excising with this in view the disease may be spread unconsciously: if an operation is to be performed it should be very radical from the first, on clinical grounds.

But, as some of you may know from my book, I have been treating very many of these early cases by dietary and medicinal means for many years, and see well defined breast lesions disappear and remain absent for many years without surgical operation. Of course a frozen section to establish the diagnosis is out of the question in these cases.

For some time past, at the request of the Board of Governors of the New York Skin and Cancer Hospital, I have had charge of a service for the medical treatment of cancer, both in the wards and in the out-patient service. In the latter I found it very difficult to make the poorer class of patients understand in regard to an absolutely vegetarian diet, which is necessary in these cases, for it is surprising to find how largely they depend upon protein food. I have, therefore, had a four-page card printed, on the outside pages of which are certain "Directions for Cancer patients," and on the inside pages a menu, for each of the three meals daily, for six days, which is to be repeated perpetually, with such changes as circumstances and the seasons may demand. I have not the time to dwell on this, but will pass some of them around, that you may see how a satisfactory diet can be arranged with no animal protein; this averages about 2100 calories per day, with from 140 to 200 of vegetable protein.

On the first page you will see plain statements in regard to cancer, urging early attention to it, avoiding squeezing, handling, or other irritation, and urging early, very radical surgical operation, when this is decided upon; but also giving directions in regard to internal and dietary treatment. On the last page are further directions in regard to carrying out the dietary, including slow eating and perfect mastication, and the conduct of life. Hundreds of these cards have been given out, and from past experience it is believed that correct attention to all these matters will in time lessen the morbidity and mortality of cancer. For, as you know, under the present, purely surgical care of cancer its death rate, according to the United States Mortality Tables, has *risen* over twenty-five per cent., from 1900 to 1913; whereas during the same period the death rate from tuberculosis has *fallen* over twenty-five per cent., by careful dietary and medical supervision.

The Faucial Tonsils and Their Proper Treatment.

E. TERRY SMITH, M.D., HARTFORD.

I believe that even the most incredulous are convinced that many systemic infections arise through entrance into the blood or lymph streams of organisms from the tonsillar crypts. This happens either with or without a primary lesion of the tonsil itself. Some of the conditions directly due to tonsillar infections are infectious arthritis (acute, subacute, and chronic), endocarditis, colitis, pruritis of the vulva, nephritis, neuritis, iritis, exophthalmic goitre, glandular infections of the neck, and chronic toxæmias without localized lesions.

In cases of acute, subacute, and chronic arthritis, the deep crypts of the tonsils frequently show pure cultures of streptococcus hemolyticus. In endocarditis, the streptococcus viridans is found in the crypts of the tonsil in about forty per cent of the cases. (The virulence of the microbes found in the tonsil was well demonstrated by a test of ours a short time ago. We took a culture from a tonsil that was only subacutely inflamed, grew it on agar for thirty-six hours, then injected seven and one-half drops into a guinea pig, at six o'clock in the afternoon; at eight o'clock that night the pig was seen alive, but the next morning at six o'clock it was found dead and cold, having died probably three or four hours before.) While everything suggests that the tonsils are the cause of many of the above conditions, we find the most conclusive proof in the results of tonsillectomy.

Before deciding positively that the tonsils are producing a certain condition, be sure to eliminate the teeth, gums, sinuses, ears, seminal vesicles, syphilis, tuberculosis, etc., and you will find that the results of tonsillectomy will be most gratifying.

*"A normal tonsil is one of nature's several barriers, the out-

* Halsted, T. H. Modern Surgery of the Tonsil. N. Y. State J. of M., Vol. 12, p. 717.

post against the invasion of infective and pyogenic organisms, and a tonsil should not be removed without a definite reason and indication. It is often difficult in a given case to say with certainty whether a tonsil is diseased and should be removed. Size is not the determining factor, a comparatively large tonsil projecting freely beyond the pillars being often entirely harmless unless it causes some mechanical interference with other organs. The tonsil which, apart from mechanical effects, causes most trouble, especially systemic disturbances and infections in remote organs, is that one which, to the superficial observer, seems very small and insignificant, the so-called submerged or buried tonsil, which may be very large or comparatively small. Because of its being buried the drainage of its crypts is interfered with, its secretions which decompose are retained, and they harbor all kinds of bacteria. Because of their disease they offer an open door through which may enter into the deeper part of the tonsil, and from there into the cervical glands, the various kinds of bacteria which find lodgment in the tonsil. The diseased tonsil, instead of being a barrier, facilitates invasion of the adjacent glands and the remoter parts of the body. It is wise to remove this portal of entrance and seal it up hermetically, as is done when the tonsil with its capsule is completely removed."

It is difficult to give a list of indications for tonsillectomy, as many cases have to be considered very carefully. Some of the obvious indications are:

1. Frequent attacks of tonsillitis.
2. More than one attack of quinsy, as with each succeeding attack there is increased likelihood of further recurrence.
3. Rheumatism, when there is a very evident infection from the tonsils. Even when there is no apparent focus in the tonsils, if no other focus can be demonstrated, cessation of the rheumatic symptoms will follow extirpation of the tonsils, in a large number of cases.
4. Enlarged cervical glands. This applies especially to those of the anterior triangle, and just posterior to the

angle of the mandible. When it is remembered that of all tonsils removed, from three to six per cent have been estimated as tuberculous, one can see that, although apparently normal in any given case, they may be the focus of infection of tuberculous glands.

5. Any chronic sinus of the neck, especially if it has resisted treatment. Many cases are cured after extirpation of the tonsils. Even without apparent pathology of the tonsils this rule holds good.

6. Cases of goitre (exophthalmic and simple) if tonsils are evidently an exciting cause.

7. Any condition that is apparently caused by a chronic infection (nephritis, colitis, endocarditis, pruritis, etc.), other causes being eliminated.

8. Simple hypertrophy, when interfering with deglutition, respiration, or aeration of the Eustachian tubes.

CONTRA-INDICATIONS.

1. Bleeders should not be operated upon unless, by the injection of rabbit's serum or whole human blood, their coagulation time can be brought up to normal limits.

2. An acutely inflamed throat should never be operated upon.

3. A recent quinsy is a contra-indication to operation. (At least eight weeks should elapse after this trouble before enucleation of the tonsils.)

In examining a tonsil I find a Hurd's retractor the most useful instrument. After applying cocaine, pull the anterior pillar forward and then press outward and backward against the tonsil. This is quite painful but it is the most efficient method I know.

It may be interesting to give in greater or less detail a few of our cases.

CASE No. 1—Mr. J. R. Age 38. Carpenter.

Family History—Negative.

Past History—Patient had tonsillitis every year for sixteen years. Four months ago had last attack and following it had infectious arthritis of the feet, so that some of the time was unable to walk at all, and at other times only by means of crutches. Removed his tonsils on May

27th, 1914, and immediately upon coming out of the ether he made the statement that his joints felt better than they had for a number of weeks, and, to quote a letter received from him on December 11th, 1914,—“Since removing the tonsils, I have not had one rheumatic pain.”

CASE No. 2—M. G. R. Age 35. (Referred to me by Walter R. Steiner, M.D., to whom I am indebted for the following history.)

Family History—Negative.

Patient was healthy as a child except for an occasional sore throat. When fourteen years old became very nervous, lost her appetite and strength. One year later developed a severe attack of mucous colitis, which did not yield to treatment but continued with varying intensity for three years. Then an attack of appendicitis came on with symptoms of pain in the region of the appendix, chill, and constipation. Subsequently had other attacks of appendicitis, of moderate severity, first every month, then every three or four months. On April 2d, 1907, was operated on for appendicitis by Dr. E. J. McKnight, and an appendix was found which was much bound down by adhesions. On section, it was much congested and œdematous. Was treated for colitis during this period by irrigations and rest in bed. At the end of three or four months there was some improvement. Had occasional attacks of tonsillitis then. After the operation was treated for tonsillitis without much benefit. In the fall of 1909 had a nervous breakdown, treated by nine weeks in bed, followed by four months at a sanatorium. After a summer's rest returned for work in the fall of 1910 in good condition. During past two years there has been gradual improvement; the colitis attacks lasting from three to four days, at month intervals. In September, 1914, took cold and had numerous attacks of sore throat until the end of December. On January 24th, 1915, her tonsils were removed, and since then she has been wonderfully improved, with entire freedom from colitis, except a four-day attack in March, after a severe influenza.

CASE No. 3—Dr. S. Age 40.

Family History—Negative.

Past History—Had always had more or less sore throat.

It may be interesting to quote a letter I received from Dr. S. on May 7th:

“In answer to your question of when my recent illness began:—I had an infection of both tonsils with the usual train of symptoms lasting five (5) days, beginning Feb. 1st, 1915. The arthritic symptoms began about Feb. 10th, at which time both ankles became involved. Slight rise of temperature accompanying the joint symptoms. Then successively both knees, lower lumbar and cervical spine, left shoulder, both elbows, both wrists, and both thumbs became involved.

March 9th under general anæsthesia given by Dr. Witter, you enucleated both tonsils. That evening I had an acute exacerbation of symptoms in left knee and the next day the right ankle and spine were involved. This lasted four (4) days. From that time, improvement began with a rapid disappearance of joint symptoms, the spine being the last to improve. At the present time I have no joint symptoms, and feel better than I have done for past year."

CASE No. 4—X. Y., Jr. Age 8 years. (Referred to me by Dr. Wm. Porter, Jr., to whom I am indebted for the following history.)

Family History—Negative.

Past History—For one year, without any apparent reason, child had been having an afternoon temperature of from one to two degrees. Upon examination the tonsils were found to be small and adenoids were not present. There was well marked adenitis on the left side, and the tonsillar gland was considerably enlarged. Mother was told that the glands were probably tubercular, and that they ought to be removed, and at the same operation the tonsils enucleated. The operation was deferred, and one year later the child was brought in with the tonsillar gland on the left side broken down. On May 1st, 1914, Dr. O. C. Smith removed the glands in the neck, and at the same time I enucleated the tonsils. The result of an examination of the tonsils and of the glands made by Dr. H. C. Russ was:

1. Tuberculous lymph adenitis.
2. Chronic tonsillitis with miliary tubercles.

Report May 1st, 1915—Patient's condition greatly improved.

CASE No. 5—Mrs. C. W. H. Age 46. Married. (Patient referred to me by Dr. E. J. Whalen, to whom I am indebted for the following history.)

Family History—Negative.

Past History—For the past six years patient had joint trouble. Started with swelling of both ankles, with redness about joint and marked pain and tenderness on pressure. No fever. Diagnosed as bad arches which support did not relieve.

Previous to this time patient had had annual attacks of tonsillitis. No quinsy. During last six years had five attacks of follicular tonsillitis; during this time was never free from pain in ankles, usually accompanied by slight swelling. For the past two years both wrists were similarly affected. For the past year had pain and swelling in all finger joints.

Illness before operation—Both ankles and wrist joints swollen and red; extremely painful on motion; no temperature.

Physical examination—Heart and lungs normal.

Patient operated upon June 13th, 1914.

Report from case in May, 1915—Since operation no swelling or redness of any joints. General condition better than it has been for years.

CASE No. 6—Mrs. M. F. O'L. Age 50. (Referred to me by Dr. Paul P. Swett, to whom I am indebted for the following history.)

Previous History—Was referred to me April 8th, 1915, for examination of the tonsils. She had been suffering from a severe polyarthrits, involving the hands, wrists, shoulders, jaws, and feet, for the past two years. Six months previously her teeth had been removed, and an alveolar abscess drained, without relief. The tonsils were enlarged, and pus could easily be expressed from the crypts, though the patient declared she had never had a sore throat in her life. The tonsils were enucleated April 15th, 1915, and a marked improvement in the joints immediately followed.

CASE No. 7—C. L. Trained nurse. Age 34. (Referred to me by Dr. Robert S. Starr, to whom I am indebted for the following history.)

Family History—Good.

Past History—First seen in 1902. At that time hemoglobin was fifty per cent. Otherwise she seemed well. In 1904 her first attack of colitis occurred. This remained acute with temperature 104°, and nausea and vomiting for about three weeks. In 1905, the next year, she suffered with tonsillitis. After that both colitis and tonsillitis appeared frequently. The colitis did not yield to medical treatment, and the thorough use of the cautery did not greatly benefit the tonsils. During this period of about ten years her general health suffered to a marked degree. Her tonsils were entirely removed in June, 1914. The following letter gives testimony to the cure of the colitis, and to improved health, which have occurred since the tonsillectomy was performed.

"April 30, 1915.

In reply to yours of this morning would say I have never had the slightest indication of colitis since my throat operation of June, 1914, and would also add that my general health has vastly improved."

CASE No. 8—Miss E. K. Age 28. Trained nurse. (Referred to me by Dr. William Porter, Jr., to whom I am indebted for the following history.)

Family History—Negative.

Past History—Patient had been gradually running down for a number of months, and on January 24th, 1914, upon examination, her heart was rapid, very irregular, about 130. Thyroid markedly enlarged. Patient very nervous. Diagnosis—Hyperthyroidism. January 28th, patient no better. Pulse fast and irregular. Examination of heart negative. Tonsils small, but submerged and infected. February 2d, patient referred to

Dr. E. Terry Smith, who examined the tonsils and disinfected the crypts with silver nitrate. Patient seen on February 11th. After tonsils were cleaned out, was considerably improved; pulse slower; patient less nervous. On March 16th tonsils were enucleated. Report from patient May 21st, 1914: "Since having my tonsils removed my health is better in every way; have gained weight; color has improved and my appetite is better than it has been for two years. I have worked steadily for two months, and even with night work my heart action is about normal."

Report May, 1915—Patient has been free from any symptoms that could be referred to her thyroid since her tonsils were enucleated over a year ago.

CASE No. 9—H. A. McI. Age 31. (Referred to me by Dr. A. S. Brackett, to whom I am indebted for the following history.)

Previous History—Appendectomy, 1904. Indefinite throat trouble for fifteen years, but no quinsy or attacks of tonsillitis. January, 1914, right knee began to tire easily, with grating in the joints, but without pain. January, 1915, left knee "gave way" suddenly, with intense pain. Soon after, began to have pain in left hip. Lumbago occurred three times, once before and twice since having trouble with the knees.

Consulted me first January 19th, 1915. Patient was in perfect health apparently, stocky, and very well developed muscularly. Both knees presented crepitus, throat somewhat congested. Much worried, on account of fear that he would be unable to continue his occupation of civil engineer.

Removal of tonsils was advised. Operation was performed February 19th, when chronic abscess of one tonsil was found. May 10th, patient stated that he was feeling much better, generally, and pain had steadily decreased so that it was practically gone, even on rainy days.

CASE No. 10—E. S. Age 10. (Referred to me by Dr. A. S. Brackett, to whom I am indebted for the following history.)

Previous History—Numerous attacks of throat and ear trouble since infancy. Removal of tonsils and adenoids performed in 1910. Better for a year, but recurrence afterwards.

I first saw her in March, 1914, when she had tonsillitis and purulent otitis media, followed by acute inflammatory rheumatism, with infection of the mitral valves. After apparent recovery, there was a slight recurrence of rheumatism, when operation was insisted upon. Tonsillectomy was performed July, 1914, when large chronic abscess was found. Since operation general health has been excellent. No recurrence of rheumatism. Cardiac compensation is perfect, though loud mitral murmur is present.

CASE No. 11—Mrs. W. P. F. Age 47. (Referred to me by Dr. Paul P. Swett, to whom I am indebted for the following history.)

Previous History—She had had repeated attacks of tonsillitis, and one prolonged attack of so-called articular rheumatism. For two years she had suffered recurrent attacks of arthritis in both feet. She was a tall, well-nourished, healthy woman, and was capable of doing her rather arduous work, except for the very badly swollen feet. For two months the feet were so inflamed that she was wholly unable to get about the house.

The tonsils were cauterized at intervals, for a few months, and much improvement resulted, but invasions of the joints recurred until December, 1914, when her tonsils were enucleated in the usual manner. An immediate improvement resulted, and in a few weeks the feet were entirely recovered. There has been no recurrence whatever, and the patient is now free from any form of joint involvement.

CASE No. 12—E. C. P. Age 40. (Referred to me by Dr. Paul P. Swett, to whom I am indebted for the following history.)

Previous History—He had had severe pain along the external cutaneous nerve of the left thigh, of two months' duration. This pain was of sudden onset following over-exertion in rowing a boat, and it was accompanied by pain and rigidity in the lumbar spine.

The man's physical examination revealed nothing of importance, except the local condition in the spine which, because of its sudden onset and the accompaniment of a rapid pulse, Dr. Swett diagnosed as an acute infectious arthritis in the neighborhood of the second lumbar vertebra. The tonsils were small and submerged, and had never been a source of trouble, but as they presented crypts containing much foul necrotic material, it seemed probable that they were sufficiently diseased to be a source of infection. Therefore the tonsils were enucleated, and in two days the pain had left the thigh, and the spinal condition immediately began to subside. The patient returned to his business about three weeks later, and has been perfectly well since then.

CASE No. 13—Mrs. X. Age 28. (Referred to me by Dr. Isaac Kingsbury, to whom I am indebted for the history.)

Diagnosis—Neurasthenia—congenital. Lues (?)—congenital. "Rheumatism"—infectious polyarthritis. Relapsing chronic tonsillitis. Infantile uterus, perforated septum.

Previous History—Father and mother excessively neurotic. Seven years ago a severe inflammatory rheumatism. Bed for weeks. A tinge or two ever since.

May, 1914—Relapse; T. 100; sweats; many joints moderately infected. Bed for two weeks. No deformity.

September, 1914—Recurrence. Intolerant of salicylates, atophan and iodides. Tonsils ragged and moderate chronic inflammation; perforated nasal septum. No cardiac involvement. Not in bed.

November 24, 1914—Relapse after six weeks' freedom. Lactic acid bacillus. Cultures and lacto-farinaceur were of value. Relapse preceded by chest cold.

Late December, 1914—Enucleation of tonsils by Dr. E. Terry Smith. Considerable shock to the nervous system. Slight return of arthritic pain one month later; transitory.

May 14, 1915—Since enucleation of tonsils patient has been well except for nervousness.

The operation without doubt has been a great benefit.

CASE No. 14—Mrs. C. C. H. Age 48. Married. In menopause. (Referred to me by Dr. Isaac Kingsbury, to whom I am indebted for the following history.)

Diagnosis—Neurasthenia—congenital. Endocarditis—chronic. Nephritis—chronic. Goitre—diffuse hyperthyroidism. Purpura—simple. Chronic tonsillitis.

Family History—Father died Bright's at 72. M. 1. (B. P. 200—very nervous.) Two sisters very nervous. (One has mitral insufficiency.)

Previous History—Scarlet and diphtheria twenty-three years ago, followed by paralysis of soft palate; ever since weak throat. Always nervous and tires easily. For many years frequent spontaneous ecchymosis. Four years ago febrile sore throat, followed by noticeable swelling of throat (12½ to 13 collar). Palpitation of heart; loss of weight and strength. At that time weight 110; P. 80 to 120; systolic; B. P. 120. Well comp. mit. insuffic. Urine low spc. grv. and of increased amount. Thy. diffusely and moderately enlarged; rather firm. Tonsils ragged and throat chronically considerably infected.

A prolonged treatment of neut. hyd. brom. quinine was of no value. Bromide of sod. helped neur. symptoms, but patient always felt best when taking sod. salic. gr. xv-xxx o. d.

There were frequent recurrent throat colds which left her prostrated; large and small subcutaneous ecchymoses occurred at irregular intervals. There were indefinite pains described as "rheumatic." The tonsils were continuously slightly infected. At times the pulse was 120 and slightly irregular in force and frequency; auric. fibrillation. There was no fever except during acute colds. Wt. increased to 115.

October, 1914. Enucleation of tonsils by Dr. E. Terry Smith.

January 9, 1915. Wt. 121½. Feels better than for years. No ecchymosis since operation. Some palpitation on exertion. Thyroid distinctly smaller.

May 14, 1915. Has had two febrile respiratory infections since. (Dr. Fox.) Picked up more quickly after them than formerly. One spontaneous ecchymosis after first infection. No "rheumatic" pains since operation. Is confident that operation has been of great benefit.

Without question, her sense of well-being has been greatly bettered. Her gain in weight is notable. I am convinced that the removal of the tonsils was of great benefit to her.

CASE No. 15—S. V. V. Age 66. (Referred to me by Dr. A. M. Rowley, to whom I am indebted for the following history.)

Family History—Father died of pneumonia; mother died of heart trouble; one sister died of intestinal trouble; two brothers died of apoplexy.

Past History—Had usual children's diseases. Mumps when about twenty. Had very severe attack of pneumonia in 1890. Since then has been well save for occasional colds and P. I.

Patient has catarrh and slight cough. Appetite and digestion good. Bowels require cathartics.

Present History—About four years ago patient had gradual onset of pain, swelling and stiffening of left ankle and foot; then the right shoulder became similarly affected; then the elbow, wrist, and hand. Later the left shoulder became involved. Had excruciating post-auricular neuralgia on left side, which she thought would drive her insane. The left leg became contracted on the thigh. The left knee was swollen, red, and painful. Patient has not been subject to tonsillitis.

Physical Examination—Patient rather emaciated woman. Pupils react normally to light and accommodation. Teeth in good condition. Tongue slightly coated. Tonsils infected and submerged. Lungs negative. Heart negative. Abdomen negative. Extremities—most of the joints of the fingers are enlarged and deformed, and there is marked swelling, redness, and tenderness of both wrists. Right shoulder is very tender and motion is limited. The left foot and ankle are considerably swollen, and there is œdema of the anterior surface of the tibia. Left knee is also swollen and tender, and there is a tender area to the outer side of the patilla tendon. The left leg is flexed on thigh and posterior tendons are rigid. Right foot and ankle are also swollen and tender.

On April 2d, 1915, Dr. Rowley broke up the adhesions in the right knee, and we enucleated the tonsils. Upon coming out of the anæsthetic, the patient immediately said that her joints, excepting knee that had been manipulated, felt better than they had for years, and that the post-auricular neuralgia that had been so excruciating was entirely gone. Patient made remarkable recovery. Joints have become less and less tender, and at the present time patient is in very good physical condition.

Note, May 7th, 1915, from Dr. Rowley—She is able to feed herself, do her toilet; she sits in a chair most of the day, and is able to stand with both knees practically fully extended. She is asking for shoes, to enable her to walk, and all the secondary foci in the joints are disappearing without the use of a vaccine, which was prepared from the tonsils at the time of enucleation.

I might continue to enumerate cases that have been relieved by complete enucleation of the tonsils almost indefinitely, but perhaps I have mentioned enough to focus your attention upon the tonsil as a possible source of infection in many obscure conditions.

We have observed that chronic conditions (if the tonsil has been the source of infection) are improved as soon as the patient is thoroughly out of the anaesthetic, while in acute conditions we frequently have an exacerbation of the symptoms for a short time. We have also noted that in chronic conditions, at the end of three or four weeks, there is frequently a slight return of the former symptoms, but these disappear in a very short time. In acute cases a return of the symptoms has not occurred in our experience. Failure to get results is often due to incomplete removal of the tonsils. Many of our most satisfying cases have been patients whose tonsils were supposed to have been entirely removed, but of which, as a matter of fact, the most important part (the base) had been left. Unless the tonsils are entirely enucleated, results are sure to be disappointing.

John F. O'Malley makes this statement—"Every tonsil can be removed completely with its capsule by a properly modified guillotine, but some cases present certain difficulties." The cases that present certain difficulties when one tries to remove the tonsils with the guillotine are those I wish to speak about, as they should be carefully dissected out. I personally frequently use the Beck-Schenck tonsillectotome in young children, but in adults and older children I proceed as follows.

After deciding that the tonsils are sufficiently diseased to be removed, the operation should be considered as a major surgical procedure. The patient should be operated upon at a hospital, and gas-oxygen-ether should be the anaesthetic of choice, ether to be given through the Davis-Crowe mouth gag. Personally I prefer the recumbent position with the head slightly lower than the rest of the body. An electric head light is the best form of illumination, and one should have a competent trained assistant. Since we have been doing our present operation we have not had a disturbing tonsillar hemorrhage. At the present time we use a suction apparatus to remove the blood and mucous

from the throat and, in the great majority of cases, control any bleeding by pressure. We are always prepared to tie any bleeding points and, if necessary, sew the anterior and posterior pillars together. We also have a Michel's clamp which has never been used. These little silver hemostats, originally made for Dr. Cushing, and modified for tonsil work by Dr. Crowe, we have found very useful. They are much quicker than tying, and we have not known of any bad results from their use. Most cases of hemorrhage are caused by injury to the walls of the sinus tonsillaris and, if one's technique is perfect, are inexcusable, except in cases where the adhesions are very dense. Infection is also frequently caused by leaving a ragged, sloughing sinus tonsillaris. When one examines the tonsil after its removal, it should not be covered with parts of the superior constrictor of the pharynx.

*"Great care should be used so as not to injure the posterior pillar, or the palatopharyngeus muscle, as any injury that leaves the palate less free than normal, in its backward and forward play, has a distinctly deleterious effect on the voice, as the function of the palatopharyngeus muscle is to tilt the thyroid upon the cricoid cartilage, thereby stretching the cords. It is, therefore, an important regulator of the pitch of the voice. Cicatricial contractions between the pillars may so interfere with its movements that the quality and pitch of the voice, especially of its higher tones, may be materially modified."

Perhaps it may be well to give in detail our routine in operative work on the tonsil. All cases are sent to the hospital; history is taken, especially with regard to hemophilia; physical examination made, including examination of urine and blood coagulation test. If the blood coagulates within ten minutes, I think it is perfectly safe to operate.

We have the usual preparation for a major surgical procedure and all adults are given a hypodermic of morphine 1/6 and atropine 1/150, twenty minutes before the operation. We use as an anaesthetic gas-oxygen-ether.

* "Tonsils," Harry A. Barnes.

This photograph shows the usual set-up for the operation. The anaesthetist is at the patient's left side holding the Davis-Crowe mouth gag. Only slight pressure should be applied to the gag, to avoid wounding the tongue. The assistant stands back of patient's head with both hands free so as to be able either to hold instruments, use suction apparatus or sponge, or control hemorrhage. The operator stands at patient's right and wears an electric headlight. The instrument stand is at the operator's left. A clean nurse should be at the assistant's right to pass sponges, etc. The patient being in the recumbent position, with the head slightly lower than the body, the mouth gag is carefully introduced so as not to injure the teeth and opened wide enough to give a good view of the operative field. (Dr. O. R. Witter's suggestion to tell the patient while going under the anaesthetic to keep the mouth open, we have found useful.) The patient should not be very deeply anaesthetized. This is facilitated if gas is given preliminary to ether.

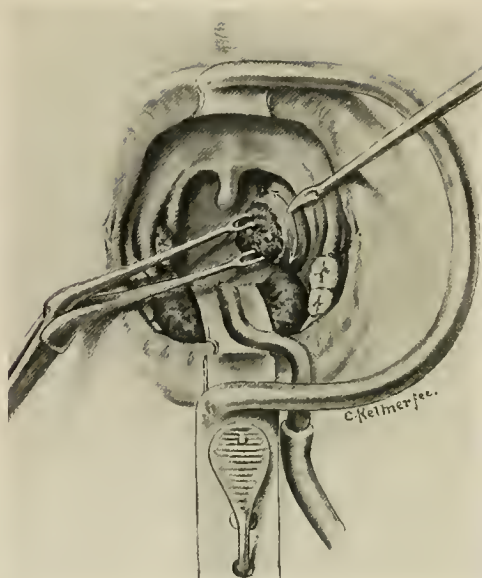
First Step of Operation—Tonsil forceps are firmly pressed against the tonsil while closed, and then opened, and a generous amount of tonsil is grasped. (The forceps I use were originally made by Vaast of Paris, and were recommended to me sixteen years ago by Prof. Luc of Paris. The present forceps were made by J. E. Kennedy & Co. of New York.) The tonsil is now gently drawn from its bed out into the throat and an incision is made through the plica, extending from the middle of the anterior surface of the tonsil to the base of the tongue, care being used not to injure the capsule. Another incision is now made from the beginning of the first incision up over the tonsil and extending down on its posterior surface, care being taken not to injure the palatopharyngeus muscle or the posterior pillar.

Second Step—The tonsil is now separated from the anterior and the upper part of the posterior pillar by means of the Carter knife.

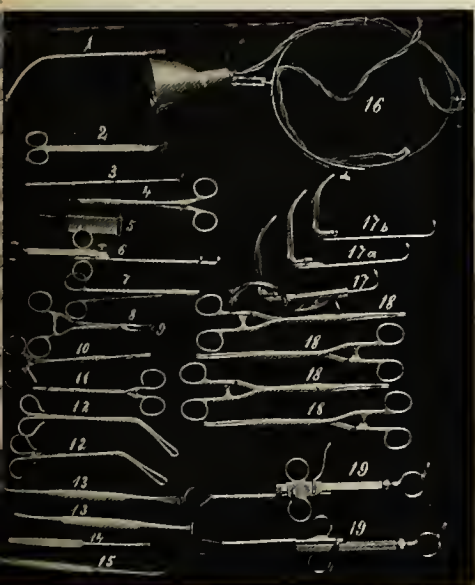
Third Step—The anterior pillar is retracted by a Hurd's retractor and held by an assistant while another pair of tonsil forceps is applied to the upper part of the tonsil to help evert it from its bed. Traction is applied to the tonsil, which is now



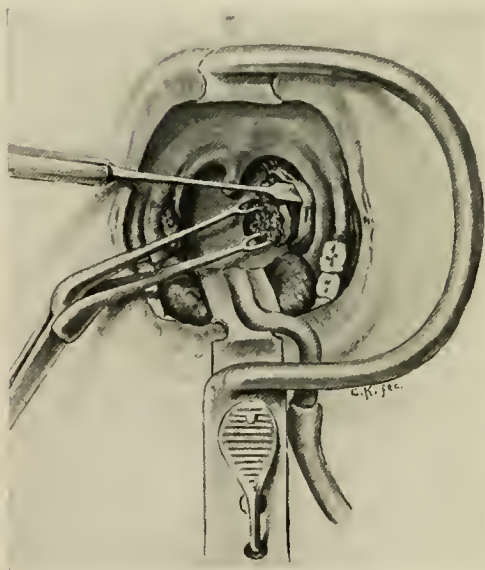
Arrangement at Operation.



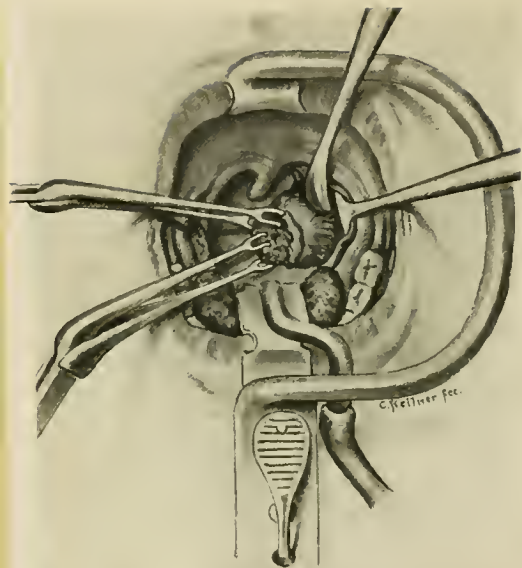
First Step.



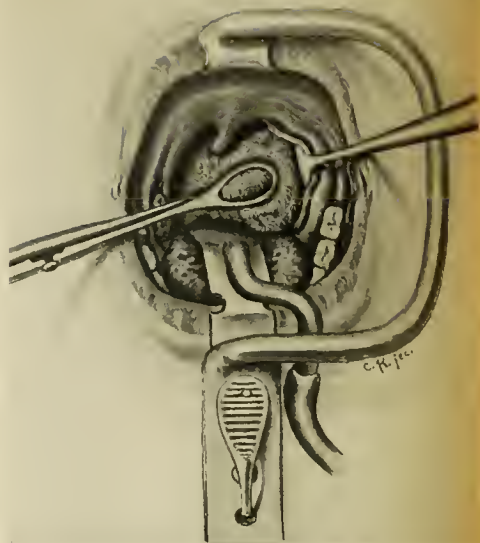
Instruments used.



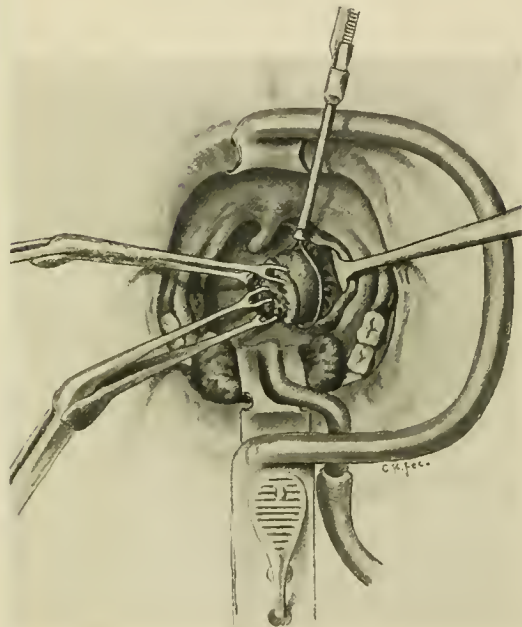
Second Step.



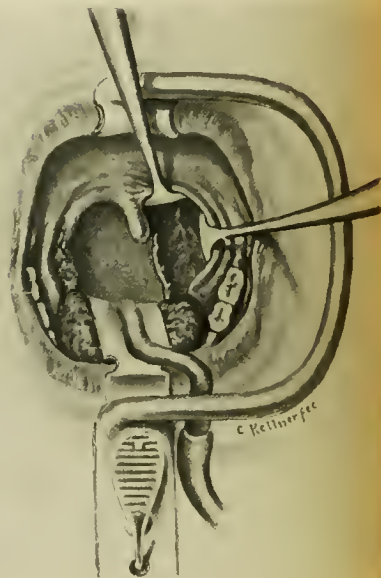
Third Step.



Fifth Step.



Fourth Step.



Sixth Step.

dissected by blunt dissection from the sinus tonsillaris, care being taken not to injure the capsule.

Fourth Step—The tonsil now being almost entirely freed, the snare (Beck-Schenck tonsillectotome modified by Dr. C. H. Borden) is applied to the base and the tonsil removed.

Fifth Step—Sponge wet with adrenalin 1/1000 is introduced into sinus tonsillaris and firm pressure made for three or four minutes.

Sixth Step—Retraction of pillars and inspection of sinus tonsillaris for evidence of hemorrhage or remains of tonsil.

If the operation is done carefully, very little bleeding will be experienced. The pillars of the tonsil will not be injured, and after the throat has become healed it will be perfectly normal in appearance and not in the least distorted. We have operated on the throats of a number of singers and in every case the voice has been improved by the operation.

The instruments we use are as follows:—

1. Metal tip for suction apparatus. (Designed by Dr. C. H. Borden.)
2. Prince's tonsil scissors.
3. Needle for suturing pillars together.
4. Shallcross's double curved hemostatic forceps.
5. Michel's metal clamps.
6. Forceps for placing Michel's clamps.
7. Forceps for removing Michel's clamps.
8. Forceps for placing the Cushing-Crowe clamps.
9. Small silver clamps for bleeding points—Cushing-Crowe.
10. Schoemaker's artery forceps.
11. Beck's tonsil hemostat.
12. Tonsil forceps, originally made by Vaast, Paris.
13. Hurd pillar retractor.
14. Carter knife
15. Abraham's tonsil knife.
16. Head light.
17. Small tongue depressor for ether gag.
18. Medium tongue depressor for ether gag.
19. Davis-Crowe mouth gag—large tongue depressor. (Made by Charles Willms Surg. Inst. Co., Baltimore.)
20. Sponge forceps.
21. Tonsil snare (Beck-Schenck Tonsillectotome, modified by Dr. C. H. Borden).

AFTER CARE

The throat should be kept clean with an alkaline mouth wash; sinus tonsillaris should be touched up with five per cent solution of silver nitrate p. r. n. until throat is healed. This usually takes from one to three weeks. Patient's general condition indicates length of stay necessary in hospital; the usual length of time is from two days to a week.

DISCUSSION.

DR. CHARLES R. C. BORDEN (Boston): *Mr. President:* This is the second time within the year I have entered the State of Connecticut to learn of tonsillar diseases and tonsillar operations.

Dr. Smith has covered the subject so broadly and so well he has left very little for me to say. I was impressed with the number of assistants and instruments he uses in his operations. It would be impossible for the average operator in Boston.

The gag which Dr. Smith uses allows a splendid operative field within the mouth. I wish to call attention to this type of instrument, however, and to sound a note of warning to anyone unfamiliar with its use. All automatic tongue depressors whether attached to a mouth gag or not are prone to give rise to most alarming symptoms. The tendency of such an appliance is to crowd the tongue downward and backwards and so to cause the patient to cease breathing. It requires considerable experience to use this instrument. When properly placed in the mouth it is of the greatest value and comfort to the operator. In the hands of a novice its use is a dangerous procedure.

One point which Dr. Smith has not made as prominent as it deserves is that of chronic tonsillitis. This is a disease most frequently observed in young women. The tonsils are usually small and most often do not appear to be diseased upon first inspection. Such patients often deny attacks of acute tonsillitis and are unaware that true tonsillar disease is present. Upon close questioning only, they admit they have frequent attacks of slight sore throats and often remove small, round, pearly bodies from the crypts of the tonsils. Patients who have such tonsillar formations frequently become very expert in removing them with hairpins, knitting needles or other household implements. Sufferers of chronic tonsillitis rarely consult their physicians for throat symptoms but for run down conditions, headaches, gastric disturbances, etc. It is often difficult to demonstrate the diseased condition of the tonsils without the use of some such instrument which Dr. Smith has shown to draw the organ forward from its pillars. Chronic tonsillitis is so common among young

women that its presence should never be overlooked, even though the symptoms most apparent are in other parts of the body. I know of nothing in the entire field of medicine which gives such immediate and lasting results as chronic tonsillitis when properly diagnosed and treated.

The question of hemorrhage following operation was not brought up. Complete enucleation of the tonsil is distinctly a hospital operation. In the Boston City Hospital last year we performed over thirty-three hundred tonsil and adenoid operations. Curiously enough, the only hemorrhage which occurred was in the case of our senior house-officer, who was himself operated upon. This young surgeon had performed more than eighteen hundred such operations without serious troubles following. When his turn came to be operated upon, he bled profusely and to overcome the hemorrhage taxed the skill of the entire nose and throat staff of the institution on duty at the time. Six metal sutures placed in the pillars at one time failed to arrest the bleeding. Finally, the six clips were joined together with a strong silk thread in a purse string manner and the hemorrhage ceased.

Large institutions such as the Boston City Hospital are not infrequently called upon to care for hemorrhage cases occurring in the hands of inexperienced or unskilled operators. Such cases are occasionally received in critical conditions. Several of our cases have required transfusion but have always recovered. Care and judgment must be exercised with this class of cases. Nature causes the patients to become faint. Overstimulation at such time causes the hemorrhage to continue when it otherwise would cease. As this is the critical time in dangerous complication, if death occurs, it comes about not from the hemorrhage but from the stimulation given at a most inopportune time.

In lecturing to nurses, I try and impress upon them that a tonsillar hemorrhage can be held indefinitely without the loss of blood by the finger in the mouth. A small piece of gauze wrapped about the end of the index finger placed between the pillars will easily control the bleeding until help arrives. It is not uncomfortable to the patient when he or she realizes the gravity of the situation. Tonsillar hemorrhages of any magnitude require ether to be given before the pillars can be sutured properly. I have frequently held the bleeding in this manner until the anesthetic rendered the patient unconscious.

DR. HENRY L. SWAIN (New Haven): You will all agree with me that after what has just been said by the reader of his paper and our distinguished guest from Boston, Dr. Borden, there remains but little which could be added on the question of tonsillectomy and how to do it.

There is no doubt that the modern method of enucleating the tonsil is the best way to handle certain cases of tonsil disease but, argumentatively, every enlarged tonsil need not be removed in its entirety, and still

more truly may it be assumed that all tonsils do not need radical attention. Certain it is that every time during the last forty or fifty years that the older operation of tonsillectomy was performed, it was not a failure. Patients were relieved, in many instances, of recurrent attacks of tonsillitis, rheumatism, quinsy, defective respiration, disease of the ear, and lymphatic enlargements of the neck, as a result of tonsillectomy and lived to a good old age even though every vestige of lymphoid tissue in the vault of the pharynx and palate grooves had not been removed. Equally true has it been that people have been born into this world, have lived useful lives and passed on into the great beyond in spite of the fact that they have remained the proud possessors of all their tonsils complete and safe from insult. Certain cases, however, have arisen where all trouble did not cease with a simple tonsillectomy or where it would seem best in order to get rid of focal infection to do a complete operation and so as a logical necessity the operation of tonsillectomy came into being. It is so alluringly attractive to some of the leading operators to do enucleation by any of the well known methods that one is tempted to never do any other operation, a thing to be deplored in very young children where there is no well-formed capsule and injury to tissues outside of it is so easily possible.

Meanwhile it is cheerfully conceded that tonsillectomy is the right and proper operation in many cases, and when one elects so to do, I know no method which does the work so well, so bloodlessly, and so safely as the one which Dr. Smith has worked out for himself, giving us to-day the benefit of his labor. Certainly as he does it, there is no better method. In large clinics and hospitals, it might be argued that a quicker and simpler method would be most acceptable and the operation with the Sluder-Beck snare as demonstrated so skillfully by Dr. Sperry at the meeting last year in New Haven, fills the bill perfectly especially in older children or young adults. In very young children one can scarcely be so thorough in the removal of the adenoids but should conserve normal tonsil tissue as it is of definite value to the system of protection during the period of rapid growth and dentition.

DR. SANFORD H. WADHAMS (U. S. Army): I am not a doctor; I am a military medico. For about twenty years, I practiced hard, enthusiastically, and suddenly I found I wasn't a medical man at all, but while I was practicing medicine it became necessary at one time to learn something about the throat.

We examine our men for enlistment very carefully with a view to the condition of throat and ears and naso-pharynx generally. We early found that young men of eighteen years of age, and we take many such men, were very apt to have very large adenoids and chronic tonsillar hypertrophy. It would perhaps astonish some of the specialists in this line

of work to see only the diseased throat, that is, the patient who is complaining of something definitely wrong, if they had occasion to examine in a routine way thousands and thousands of young men as I have for several years. We find adenoids that block up the whole posterior nares, tonsils that project into the throat so that deglutition is very seriously interfered with. We soon found that we had to take cognizance of such conditions and we started very early with the general principle that no man could be enlisted in the army with that condition existing, although he apparently was fit otherwise, unless he was willing to have his tonsils and his adenoids removed, so we are very busily engaged in ectomizing as Dr. Smith calls it.

We get these young men from all over the United States. My work has been on the Atlantic seaboard. They come to us often undersized, poorly developed. The first stage in their development is to put them to work, athletic work. Their days are long days. They are given physical exercises early in the morning and they keep actively engaged until night and hardly a minute of that time is not devoted to some duty. Included in that is talks on the care of teeth, oral cleanliness, and all that sort of thing; and at the end of sixty days, which is the usual period during which we have them under observation, I think that you would be all astonished to see the results, and particularly the results in the youngster, the mouth-breather, with the chronic tonsillar hypertrophy, who has had his tonsils removed and his adenoids removed and who has had the setting up exercises and the general physical development.

As I say, my point of view is entirely different from that of the specialist. We are not specialists, we are simply trying to make the most of the poor material that we get, but I have been convinced that a great majority of these young men should have tonsillectomy done because in examining these diseased tonsils or hypertrophied tonsils we generally find sufficient cause, if you wish to put it that way, for ectomizing them. I thank you.

DR. E. TERRY SMITH (Hartford): As Dr. Borden fittingly remarked, to do a proper tonsillectomy one should have proper assistance and the operation should be done as any major surgical procedure.

Recently I examined the throats of three children who had been operated upon five days before I saw them by a competent New York surgeon. In one case the tonsils had evidently been removed with a tonsillectotome and the throat looked very well. In each of the other cases the palatopharyngeus muscle had been injured, and those children will grow up with throats more or less distorted. It is possible for any operator to injure the throat, but that possibility is not nearly as great if the dissection is done deliberately and with the operating field clean and well illuminated.

The importance of removing diseased tonsils I think is very well demonstrated by the action of the United States Government in this matter. Having found that men with diseased tonsils become very much more efficient if the tonsils are removed, it insists upon operation for all soldiers who are found to be thus infected.

MEDICAL PAPERS.

The Proper Management of Labor by the Physician.

DAVID D. REIDY, M.D., WINSTED.

Pregnancy is not considered as seriously as it should be by the medical profession and from the lack of due scientific care the belief of every mother is fostered that she must suffer pain and discomfort and a long train of unavoidable symptoms, to which she submits uncomplainingly.

The art of obstetrics can only be mastered by extensive experience. Because of the arduous labor and lack of remuneration, it is given up by the majority of physicians just at the time when their experience is of the greatest value.

The experienced surgeon is the better able to meet the unexpected, or rather anticipate it, so also the experienced accoucher in childbirth.

What we need to-day if we expect to make strides in obstetrics is more men taking up this branch as a specialty. Then only can we expect that the physiology of pregnancy will be better understood, that labor will be much less severe, and that the morbidity of childbirth will be lessened.

The carrying of child and bearing of same is the greatest honor that can be attached to womanhood. It is also the gravest responsibility; for her own health and even her life may be the cost she will have to pay, together with the health or life of the unborn child.

Dangers so great and the pains of childbirth so severe are the causes why so many women forego motherhood. Can we physicians minimize the dangers and alleviate the pains? I say yes—we must educate ourselves to the belief, and convince our patients of the fact, that if they place themselves in the hands of a skillful physician at the beginning of the pregnant term a long train of painful symptoms is avoidable, that they can enjoy perfect health and can approach the moment of childbirth without fear and pass through it with little danger.

The pregnant woman having placed herself in the hands of a physician, the responsibility is his of guiding her through pregnancy and making her labor less painful, and safe.

In every case of pregnancy three things are to be considered: The mother, the child, and labor. In considering the mother we must consider first, that she may be subject to the various ills of woman plus those conditions caused by the carrying of another body to which she must give food, and take from it the various poisons of metabolism, functions so conducive to its health and strength.

If, as is the opinion of Ballentyne, the maternal response in pregnancy, such as the mammary changes and cessation of menstruation, are due to some substance secreted by the unborn infant, likewise that the ductless glands are then stimulated to unusual effort, the etiology of the maladies of pregnancy cannot be solved until the physiology of pregnancy is better understood.

Careful advice must be given the future mother concerning dress. She must not have compression anywhere. There must be little weight hanging from the waist. It must be carried from the shoulders.

The clothes should be light, yet sufficiently warm and comfortable; corsets should be laid aside and maternity waists used; low-heeled shoes should be worn.

Baths are of vital importance to a pregnant woman, but they should be neither too hot or too cold, nor greatly prolonged. Strong, robust women may enjoy sea bathing in the early months if the water is above 60, but not at the time of the regular menstrual epoch.

Plenty of fresh air is essential, for the gravid woman is eliminating an increased amount of CO. Crowded rooms should be avoided. There must be a thorough ventilation of the rooms occupied both by day and night. From eight to ten hours of every twenty-four should be devoted to rest.

As most cases of pregnancy occur in women who are compelled to labor at home or elsewhere, advice should be given as to certain efforts that are apt to be followed by ill results, especially over-reaching and severe straining.

Ordinary housework is not objectionable, so long as it is not too arduous, as the necessary exercise is beneficial and the being occupied prevents many thoughts of misgiving and fear. If charity spent less in other ways, and more in making the time of pregnancy easier by placing many poor though deserving women in better surroundings before and during the ordeal, a better race would be developed and our asylums and hospitals would not be filled as to-day with children handicapped before birth.

To those of the affluent class, walking is the most favorable form of exercise, and carried to the point of slight fatigue every day, will put the woman in the best physical condition. Auto riding should be indulged in with great care, especially at the time of the normal appearance of the menses.

The habits of elimination of the patient must have careful consideration; with some the normal excretion of the skin and kidneys is limited and constipation is almost constantly present. If those foods be given which contain a large quantity of waste matter stimulating peristalsis and an abundance of water there will be much material benefit.

True, advice here given is what would apply to any patient as essential to obtain a normal physiological condition.

But the growth and development of the foetus is a purely physiological condition and depends upon the source from which it comes. If the source is contaminated by effete material, due to the improper working of its various parts, or from the products of metabolism, due to the growth and development of the child, the physiological becomes pathological. This is the point of general health at which the obstetrician has to begin and rid the blood stream of its contamination, whatever it may be.

The significance of a thorough chemical and microscopic examination of the urine cannot be overestimated and should be carried out in the early months of pregnancy.

By it we can determine the results of the various metabolic changes which enables us to know to which organ a defect, if any, is attributable and to which we can apply the proper remedial measure.

Our tests should include albumen sugar—urea and indican at least. A low urea output is a danger signal and the patient should be kept under close supervision. Indican will show the action of the intestinal canal and its contents. Vomiting in pregnancy and eclampsia is instigated by the ovum, but its primary cause is probably an insufficiency of metabolism in the liver, and secondarily in the kidney from intestinal intoxication.

So-called physiological albuminuria should be regarded an indication of renal abnormality and the patient watched accordingly.

Recognition and differentiation of the toxic, infectious and mechanical types of albuminuria is of vast importance in separating the safe from the hazardous cases, and while it may not indicate when to empty the uterus, it should lead to the adoption of such diet, hygiene and medication as to make intervention unnecessary in many cases, and with this precaution many children would be born that otherwise would have been doomed.

The blood pressure of the pregnant woman should be taken as a routine measure, and as soon as 135 mm. is reached, close watch should be kept. High blood pressure may occur in pregnant women without any concomitant signs of toxemia, just as is seen in chronic kidney disease, indicating the importance of clinical observation.

In toxemic cases the gradual rising pressure, the persistent nausea and vomiting, the head pains, insomnia and restlessness, and the characteristic urinary findings, all point to an acute and progressive condition and should be looked upon as a subject for surgical interference. During the latter months of pregnancy the use of the pelvimeter will be of decided advantage in many cases in determining what may have to be done later.

CONCERNING THE CHILD.

The size of the child is dependent on—first inheritance, second upon the age of the mother, older women having larger children.

Between the opinion of Bondi, who claims the weight of the child is not dependent on the state of nutrition of the mother, but grows somewhat in the way of a malignant tumor and that the placenta contains the same amount of fat for absorption in the

severest hyperemesis or tuberculosis as when the mother is in perfect health.

And Prochownik, who after 28 years' study, believes that the nutrition of the mother and her diet is of greatest importance in the development of the child, with which opinion I am fully in accord.

The finding in exceptional cases that the mother in good condition brings forth a puny youngster is, I do not believe, because of her perfect condition but is due to some metabolic defect in the foetus.

Women whose diet is composed of the heavier food stuffs, as meat, eggs and the legumes, will have children with more solid bone development than those on a fruit and vegetable diet. This can be seen in the carnivorous and herbivorous animals. Therefore the limiting of the heavier food stuffs will enable us to govern the development of the child. In fact we must be careful not to restrict the diet too much to fruit and vegetables for fear of the danger of preventing the proper ossification.

Having brought the parturient woman to term, the knowledge and experience of the accoucher are the factors of importance for a safe and painless labor.

As the surgeon examines his patient to diagnose the condition present and the ability of the patient to withstand the necessary surgical procedure, so also should the accoucher examine his patient, judging the host, the passage and the passenger.

It is unnecessary for me to dwell on the fact that an obstetrical case is a surgical one, and no one should attempt any procedure without establishing surgical asepsis with as much care as though a laparotomy was to be performed. When physicians realize that the danger of septicemia by placing a surgically unclean hand or instrument in the parturient canal is far greater than placing them in her abdominal cavity, then will the morbidity of childbirth be lessened and fewer women will be left semi-invalids for life.

The size and position of the child in the utero can be fairly easily made out by palpation and auscultation, not so easy the position in relation to the superior strait.

The pelvimeter reading being known, we should examine the perineum, the vagina, the bony canal, the conditions of the cervix and the presentation and its position. The diagnosis of presentation and position must be made at this examination if we are to give the greatest aid to the patient.

The management of labor will depend upon the results of our examination.

From this we shall have learned whether the mother is capable of bearing the foetus and whether it is large or small and in what position it is being protruded.

I would classify as normal labors those in which the mother's pelvis is above $8\frac{1}{2}$ c.c.m. and the child $7\frac{1}{2}$ pounds and the presentation being head or breech in either anterior position. All other presentations and positions I would consider as abnormal, requiring interference in most cases.

The first stage of labor is described as the time from the beginning of pains until full dilatation of the cervix, and I would add the impaction of the presenting part in the superior strait. This dilatation is brought about by uterine contraction, causing the bay waters to act as a wedge on the presenting part of the child that has been carried into the superior strait as the result of a certain amount of moulding and flexion to dilate the cervix. Any deviation of these factors will cause an abnormal length of this stage.

If dilatation is progressing, and the position is favorable, the physician's attitude should be that of patience and the alleviating of suffering. If, however, dilatation is slow he should determine its cause.

The condition found will be a short bag of waters, rigid os, lack of uterine tone, or an abnormal presentation or position. I am leaving out of consideration abnormal pelvis and abnormal children.

If the bag of waters is short, rupture it. For lack of uterine tone quinine and strychnine may be given, but manual dilatation is the best uterine stimulant.

In rigid os, morphine, to relax the circular fibres of the cervix, has never been followed by ill results in my hands.

In cases of abnormal presentations and positions, I think it is an infliction on the patient to permit her to undergo intense suffering, hoping that she may right what a physician can or should be able to do in a very short time.

In cases of head presentations we should never permit an occipito posterior position to persist; neither a face or brow. It should be converted into an anterior position. The patient should be anesthetized, the hand introduced, carefully dilating the soft part and the cervix.

Palpation of the ear is probably one best landmark as to the obliquity. The head should be lifted up and rotated a half circle, that is an R. O. P. should be converted into an L. O. A. and an L. O. P. into an R. O. A. The precautions to be observed are that the body of the child rotates and that neither the cord nor arm comes down before allowing the head to settle in the brim of the pelvis.

Whether to extract immediately or give nature another chance will depend on the condition of the mother.

If progress in breech presentation is prolonged we should dilate artificially until one can introduce a hand and bring down one or both feet, being sure that sacrum of the child is anterior.

Plenty of time should now be given that the child's pelvis may mold the soft parts, making more room for the delivery of the after-coming head. The same procedure would be applicable for any presentation requiring breech extraction.

The second stage of labor, the expulsion of the child, depends upon the forces extended by the uterus and auxiliary muscles. It is during this stage especially, the latter part, that a woman undergoes her greatest suffering and during which her physician can give her the most relief.

If pains are infrequent and weak at this stage, the giving of pituitrin works well in the majority of cases, intensifying the pain and expelling the child quickly. It should never be given without having chloroform and forceps ready. For the pains it starts are sometimes most intense, making one feel as though the uterus would rupture. A little chloroform relieves this condition. I have found that pituitrin acts better in cases where

the uterine contractions are good, but still of very short duration, and the patient does not exert pressure, rather than in cases where the uterine pains are of good duration but weak, and in this condition, if the injection is not followed by expulsion within one hour, believe it is better to apply forceps than repeat injection.

The subject of anesthesia and amnesia in obstetrics is receiving more consideration to-day than ever before, and we hope it will mark an epoch in the art.

In some women labor is little more than a discomfort. Some have been known to expel a full term child when they were hardly conscious that labor had begun.

Granting, however, that in many cases anesthesia in labor is an advantage, if not a necessity, the physician must select the anesthetic and determine when and how to use it.

The choice lies between ether and chloroform on the one hand, and morphine alone, or combined with scopolamine or hyoscine, on the other. The dangers and disadvantages that it is claimed result from the use of anesthetics and analgesics in labor are: a prolongation of the presence, by weakening the uterine contraction, and increasing the interval between them, a disposition to post partum hemorrhage and asphyxiation of the child.

Acute observation has demonstrated that an anesthetic, if not pushed too far, has no influence on the power, duration or frequency of the pains, and by relieving the suffering that causes exhaustion, the danger of post partum hemorrhage is avoided. This cannot be said of analgesics as morphine or its combinations except in so far as they relieve suffering and exhaustion.

My experience has been that in cases that progressed rapidly the suffering was less severe than in cases in which each pain accomplished little other than uterine exhaustion. This would rather determine the choice of an anesthetic or analgesic. From observing others use morphine and scopolamine, and from personal use, I believe that its place of usefulness is in cases of good uterine contraction, and progress being made, when it can be used with perfect safety.

While, on the other hand, a case slowly progressing, with poor contractions, ether should be the choice, as it does not decrease the power or frequency of contractions, but rather stimulates them. It is in these cases that we are called upon to increase the force of contraction by the use of pituitrin, or the extraction of the child with forceps, and the danger of asphyxiation is less if morphine or its combinations have not been used.

Such, gentlemen, are a few modes of treatment which would make pregnancy less to be feared by the prospective mother. Their application would tend to make of motherhood a less painful ordeal, a stronger, healthier offspring, and a great source of relief and consolation to the doctor called upon to guide and aid the mother through her long and anxious expectation of bringing into the world the fruit of her womb.

DISCUSSION.

DR. T. WESTON CHESTER (Hartford): We are still treating the cripples of former days when obstetrics was looked upon so lightly and the hospitals are constantly full of them. Take a woman who was attended by a midwife years ago, and you will find when her daughter has her child she has a physician. You will find that while a great many of the older people had midwives their offspring now have physicians and every care that can be given to them.

The doctrine, if we can follow it out, as outlined from the time of pregnancy through, is certainly a good one, and the slogan should be "watch." The patient should be watched from the beginning until the time of the labor and after that until the patient is about. If we follow this line and teach our patients to come and see us often, let us know every pain they have, I think we will be better able at the time to cope with the birth. I have had several cases this week which through neglect, not of the physician but of the patients themselves, had hesitated to report when their legs were swollen, spots before their eyes, with dizziness and still went twenty-four or forty-eight hours before they consulted a physician. The physician had not had a specimen of urine in four or five weeks, and still both of these cases had almost total suppression of urine. One after three hours secreted no urine whatever and after six hours only four ounces of very thick urine. Watch the patient.

I agree with the doctor on diet. A great deal can be done with the diet in regard to the size of the child. We have all had patients who have had dead babies at the first confinement; a large child, hard con-

finement. In many of these cases if the diet is cereal and fruit and vegetables we produce a smaller child. Of course there are exceptions in all cases, but as a general rule we will have a good baby which will grow later but can be kept down to six and a half or seven pounds. I am a great believer in the use of the Voorhees bags when we have a tough rigid cervix or when we have a dry labor or for inducing labor prematurely. The Voorhees bags is used a great deal and I find it helpful.

The use of morphine in these cases as the doctor recommends is certainly one of the things which we all recommend. Give a dose of morphine and in a couple of hours examine the patient and you will find she is much further advanced than she would be without it. Pituitrin should be used carefully. The doctor spoke of the intense contractions which are frightful if you use a full ampul. I do not believe in a year I have used a full ampul at any one time. I use half an ampul and in twenty minutes or half an hour another half ampul. You will find a great many times that the first half will be sufficient. Of course it is understood that you use it at the proper time after dilatation of the cervix and the child is on the descent.

The doctor just mentioned the word scopolamine and morphine, and that leads me to say just a few words about the twilight sleep. We have had at least one hundred cases in the Hartford Hospital, ward cases and private cases of various divisions of the city and surrounding neighborhood. Of these one hundred cases I should say seventy-five per cent. were well twilighted and the patients afterwards tell you how little they knew about it, how perfectly delighted they are with it, and if they are going to have another child they certainly would have it again.

The other cases are those where they have islands of memory due to our idea of safety first. That is, we give the first injection and perhaps the patient comes out a little bit before we give the next injection. They will afterwards have little islands of memory, and will remember certain things between the injections, but that I think is erring on the safe side because we have had no deaths of mothers and no deaths of babies that we can indirectly or directly lay to the use of the twilight sleep.

We had a few cases, about three or four out of the hundred, who became excited and it took three or four people to keep them in bed, and that is one reason I think why it is advisable to have all such cases taken to the hospital. I have never tried it in a private house but once and it so happened that the one case was one of these excitable cases and for two hours I had a terrible time keeping the woman in bed. There was just the nurse and myself, and as the patient would stand in the bed we would have to knock her knees out from under her in order to get her back again. She was perfectly good-natured about it, but simply a constant toss, toss, toss, trying to get out of bed. That's the only case I have

had in a private house and I would not take another unless they could well afford to have another physician or second nurse to help. This of course we can always get in the hospital.

We have the regular formula of the Freiburg clinic, which is put up in ampules in the hospital, and contains 1-100 of a grain to each c.c. The first injection is one c.c. with one-sixth of morphine. After an hour or an hour and a half we examine our patient and see whether she is twilighted. She may go on for another hour, when a second dose is given of the 1-200 of a grain of scopolamine without morphine. That is continued at from an hour and a half to two hours intervals. The average case will take three or four injections. We have used as high as fourteen. Of course this treatment is like any other new thing. When chloroform and ether first started everybody was skeptical. The same with antitoxine. When antitoxine first came in many doctors wouldn't use it. So we have made it a rule to ask the patients when they come into the hospital if they would like twilight sleep. If they say no, well and good, we never use it. If they say yes and ask us if we like it and if it is good we tell them we like it but we don't urge it. Because just as sure as there is calamity we will be blamed. Therefore we are letting the laity come to us and ask us to give it rather than forcing it on them.

DR. KATE C. MEAD (Middletown): I heard Dr. J. Whitridge Williams in Boston last fall say that there were only two good obstetrical hospitals in the United States; one of these being in New York City and one in Pittsburgh. This opinion was given before an audience of Boston people and they squirmed of course when he said the Boston lying-in hospital was bad, quite as bad as any in the United States, but he did not say that there were not good surgeons and good obstetricians working in the hospitals making use of the materials that they found at hand. Dr. Williams' plea was for many more obstetric hospitals for the poor people because it is very difficult for the midwife and the young doctors who take care of the poor people in the slums of our cities to take care of them properly. That brings up the whole question of the midwife and the question as to whether the midwives are not as good as some of the young doctors who try to do the work in obstetrics.

I was in Sweden and Norway last summer where they have opened a great many obstetric hospitals for the poor and they are as fully equipped in every way as the surgical hospitals. They educate midwives and give them diplomas when they are competent to take simple cases. One obstetrician in Sweden told me that he would not be hired to look out for the women before parturition because that was well done by the midwives. Of course this means a very serious question for us in America, and it also means making more strenuous laws and more rigid regulations of midwives.

In Middletown one of our physicians who is an excellent obstetrician has about one hundred and seventy-five cases a year whereas the midwives have about two hundred and fifty. We had five hundred and forty babies born in Middletown last year. The midwives like this doctor and he likes some of them, and he says they generally call the physician for a difficult case, and they are not very meddlesome. I think he has not had much trouble from them.

We have a large infant mortality in Middletown but the percentage of still births is not as great as it is, for instance, at the Sloane Maternity in New York.

The Work of the State Tuberculosis Commission, its Development and Present Outlook.

DAVID R. LYMAN, M.D., WALLINGFORD.

Anyone attempting a critical review of the Tuberculosis Campaign in Connecticut under the direction of the State Tuberculosis Commission must bear in mind that throughout its entire course the work has been in process of development. Five years ago, when the first of the state sanatoria was opened, the tuberculosis work of the state had been confined to three small sanatoria for early cases: Gaylord Farm at Wallingford, Wildwood at Hartford, and Undercliff at Meriden. There had been no attempt to solve the problem of the care of the advanced cases whose presence in the crowded tenements carried certain infection to each successive generation, and aside from one or two local organizations no attempt to carry on an educational campaign in the schools and factories as to the cause, prevention and treatment of the disease.

The first step toward the development of an organized plan for meeting the tuberculosis problem in our state was the appointment by Governor Woodruff in 1907 of a special commission to investigate the whole subject and report to the legislature. In their report presented to the Assembly of 1909 these gentlemen gave a very comprehensive review of the situation in the state, and wisely laid emphasis on its two greatest needs. These were the establishment of institutions where all classes of cases—the hopeless as well as the curable—could be cared for; and the division of their maintenance expense between state, town and individual, so that it would be possible for indigent cases to remain under sanatorium care as long as might be necessary. The commission recommended an appropriation of \$175,000 for the construction and equipment of three institutions for 100 patients each, in Hartford, New Haven and Fairfield Counties, and the appointment of a permanent commission to oversee them

and to direct the general campaign in the state. In order to establish these three institutions within this limited appropriation, it was necessary in two instances at least to secure property with existing buildings which could be modified for their purposes and to erect the new ones on as simple a scale as possible. It is easy to see how this has handicapped the work of these sanatoria and made their further development in many ways slow and difficult. It has often been suggested that it would have been better if the original commission had erected but one model institution with their funds. Had they done so, however, Connecticut's provision for her tuberculosis cases would never have reached its present development, which, in the number of beds provided, compares most favorably with that of far larger and richer states. The original commission decided most wisely to get the state definitely committed to the support of these institutions, knowing that as the needs of the work became manifest the funds for their further proper development would be forthcoming. Thanks to their foresight we have to-day at Hartford, Meriden, Norwich and Shelton accommodations for 575 cases; accommodations which though by no means perfect are doing an enormous amount of good work and of which we have no reason to be ashamed.

The progress of the work was severely handicapped by the death of the first chairman of the commission, Dr. J. P. C. Foster, which occurred before the institutions had been opened for the reception of patients and before it had been possible to plan the details of their management. Dr. Foster in his capacity as executive head of Gaylord Farm had not only made a closer study of the institutional treatment of tuberculosis than any other physician in the state at that time, but had known from personal experience what it meant to be afflicted with tuberculosis and to have to spend long months in the fight to regain one's health. The gentlemen who comprised the commission after his death had none of them had these advantages although Dr. George C. Knight, who succeeded him as head of the commission, brought to the work a valuable fund of experience in details of construction and administration.

The treatment of tuberculosis in institutions, as in private practice, presents, as you all know, many features which are peculiar to itself, and on account of which its standards differ from those required in the care of all other diseases. The labors of the first commission were heavily handicapped by the lack of this special knowledge, which left them to deal with many new and complicated problems, the best solution of which had to be slowly worked out. The result of this situation was that while the state was providing beds where the advanced cases could be cared for so as to prevent the spread of infection in their homes, and was solving the problem of caring for the indigent cases, it was not getting the full benefit from its expenditure in these institutions. In July, 1911, Governor Baldwin appointed to the Commission its present Chairman, Dr. Maher, and since that time the work has had the advantage of that special knowledge of its needs without which its early days had been so severely handicapped. Under his leadership the internal management of the state sanatoria has been steadily developed until they now seem to give promise of realizing their full usefulness to their patients and to the state at large. A few details may perhaps give you a better understanding of what this development has been in the three original sanatoria. The sanatorium at Norwich was not opened until February, 1913.

In the early days of the work the Medical Superintendents were given no authority to institute or enforce regulations for the control of their respective institutions. The early regulations required patients to remain out of doors from one to three hours daily. Now the entire day must be spent in the open. Absolute rest was required of all patients for from half an hour to one hour. Now two hours are required. Smoking in the buildings was permitted and a bag of tobacco and a corn-cob pipe furnished each man once a week. Now the use of tobacco is restricted to certain hours, is prohibited in the buildings, and at the Norwich sanatorium is prohibited altogether. The State no longer furnishes it. The patients were allowed to leave the grounds almost at their own inclination, exercise being practically unregulated, and leaves of absence were looked upon as

a right. Now exercise is prescribed for each case, leaves of absence are limited to thirty-six consecutive hours every two months, and these as well as permits to go to town are only given when the superintendent deems best. Patients were provided with no instructions as to the disease, its treatment and prevention, beyond the necessary details as to the care of their sputum while in the institution. Now each patient is on admission given a leaflet of rules which is read to him by the nurse, and another leaflet printed in his own language and dealing with the cause and prevention of tuberculosis. In addition to this, personal conferences are held periodically with each patient by members of the medical staff. Eggs and milk are no longer sent to the shacks at diet hours and the patients permitted to help themselves and even hold "contests" in the consumption of these articles. They are now apportioned on orders of the physicians as indicated and at great saving both to the digestive systems of the patients and to the purse of the state. This sounds like a simple and reasonable reform; yet shortly after it was instituted we were confronted with several formal affidavits of complaining patients, setting forth that they could not get eggs without a physician's order! There was no regulation for the serving of special meals or diets to infirmary cases, all patients being given the same bill of fare. Now special diets are provided for those who need them, and the dying cases being given practically anything they ask for which can reasonably be furnished.

The medical records of the institutions have been developed to where information as to the course of any case and the treatment it has received is readily available for the inspection of the family physician as well as the members of the commission. In each ward a typewritten digest of the history of each case is now on file, and to this is appended notes at every examination briefly outlining the course of the case and its condition from time to time.

In order that the medical staffs at the several places may not have their attention too entirely absorbed with the daily routine of discipline, provisions, and the order book, special attention has been given (so far as our limited resources will admit) to

the scientific side of the work, and each of the four sanatoria provided with a different medical periodical. By exchange among themselves this enables our physicians to keep posted on the current medical literature. Once a month staff meetings are held at one of the sanatoria. These are devoted chiefly to medical work; the demonstration of interesting cases, the study of doubtful ones, and the comparison of laboratory technique, experiments, etc. The laboratory work is not limited to the usual routine examinations of sputum, urine, blood, or gastric contents. Guinea pigs and the incubator are made use of in all cases in which the diagnosis is in doubt or where there seems to be possibility of interesting developments. That you may see that all this is not mere routine I may say that Dr. Stockwell, the superintendent of Shelton Sanatorium, has succeeded in isolating in pure culture the rather rare streptothrix—pseudo—tuberculoa from five cases presenting the symptoms and physical signs of advanced tuberculosis but from whose sputum no tubercle bacilli could be obtained.

CHILDREN.

Up to eighteen months ago there were no facilities available for separating the children from the adults, and these little patients were scattered through the buildings of the various sanatoria. This condition was detrimental both to them and to the older patients, but under the law which requires that *all* cases applying be received there was no alternative open to us. With the completion of the new shack at Hartford we were able to set aside definite quarters for the children there, where they are not only cared for separately but where we maintain an open air school, so that their mental development may keep pace with the physical improvement. The results here are one of the most gratifying features of our work. There is an enormous need for the enlargement of our facilities for caring for the children. It seems folly to neglect early and curable tuberculosis in childhood and strive to provide beds for the more advanced active and usually incurable cases these same children will present in later years. The state commission has emphasized this need in

its last two reports and asked the legislature for means to commence this work, but as yet there have been no funds available.

THE INCORRIGIBLE CONSUMPTIVE.

Our greatest problem has been the handling of the incorrigible patient,—the ordinary drunken rounder of the almshouse class. Unfortunately the original statutes of the Tuberculosis Acts prohibited the retention of these cases in the almshouses and compelled their acceptance at the state sanatoria. You may picture the problems which these institutions have contended against when I tell you that on the day the Meriden Sanatorium was opened thirty of these cases were transferred there from the New Haven Almshouse! A more inauspicious opening would be difficult to imagine! Fortunately for our work the statutes also stated that "Patients who are of immoral or filthy habits, or who for other good cause in the opinion of said board are unsuitable for association with the inmates of such homes, shall not be received or retained unless separate accommodation is provided for such patients." In order to save the state sanatoria from becoming mere lodging houses for drunken loafers, we have had to have recourse to the protection afforded by this statute. We fully realize the danger of having these cases drifting around the poorest lodgings of our towns. They are, however, but a small minority of those needing treatment, they are no more dangerous to the health of the community than the untaught consumptive of a higher social grade, and the latter would not mix with them and should not be asked to. Knowing that our duty was first to the citizens who were of real value to the state, we have followed this plan. We have, where the offense has not been too outrageous, given these unruly cases a second and usually a third trial, transferring them to other sanatoria under discipline. When these efforts have proven of no avail we have discharged these patients and refused to readmit them. We have in our office a thick and steadily growing "trouble file" in which we keep the detailed record of all such cases. We had hoped with its eloquent aid to secure from the legislature some provision whereby such cases, who recognize no

obligation to their fellow man and whose presence at large in the community is a distinct menace to the public health, could be isolated under police control. The legislature did not see fit to make any such provision and we face at least two more years of contention with town authorities and the many influences they bring to bear in the effort to induce us to relieve them of this most troublesome burden, and at the expense of the efficiency of our state sanatoria. After this problem has been brought home to the town authorities of our state through two more strenuous years, we trust that our recommendations to the next legislature will be backed by a sufficient public interest and opinion to secure definite action on this most pressing need.

INFIRMARY BEDS.

Another of our problems is the lack of accommodations for infirm cases. It is our opinion that this problem should eventually be settled by requiring the local hospitals to care for, under state aid, all hopelessly advanced cases from their own towns, and leave the present infirmaries of the state sanatoria to care for those cases showing hope of benefit from proper treatment. This should be done for two reasons. It is a hardship for these dying cases to be sent far away from their families and friends, and it is a great detriment to the case that is not hopeless to be placed among those who are. *

The last legislature appropriated \$25,000 for a new infirmary at Shelton. With this we were able to erect a modern infirmary in the place of the hopeless makeshift of an old building which had been used up to that time, but we were not able to increase our number of available beds. Without exceeding our appropriation we erected as our new infirmary the central portion of the plant we so greatly need and with complete plans so that additional wings for sixty more beds could be added without interfering with the present structure. We asked for \$45,000 to complete the plant, or for such portions as the state could afford at present. Two of the additions would have cost \$5,000 each, another \$15,000, a fourth \$20,000. We needed and hoped for all. We expected at least one. We were given none.

We realize that this is a year of economy but cannot help regretting that we were not given means of caring for at least a few more of these cases that need comfort and relief so badly.

We also asked the present legislature for authority to discharge from the sanatoria all thoroughly arrested cases whose physical condition was such that they could return to work without endangering the public health and with distinct benefit to themselves. The law compels us to treat all cases regardless of the stage of the disease, and we have some who prefer to be supported indefinitely at the state's expense rather than face the prospect of contributing to their own livelihood. Their indefinite stay in our sanatoria is harmful to the institutions and an injustice to those who are waiting for a chance to secure treatment. The legislature, however, deemed it best not to change the present law.

NURSING.

A most difficult problem, and one that is yet in process of solution, is that of securing efficient nurses for our sanatoria. The best of the regular graduate nurses can rarely be secured for this work. Even when they are available they have had no previous training in tuberculosis work and no comprehension of its peculiar needs. At Norwich, Dr. Campbell was able to start the institution with a full corps of specially trained tuberculosis nurses, and the care our patients receive there is a constant source of gratification to us. At the other sanatoria, however, our head nurses have, with a few valuable exceptions, had to rely upon the nurses furnished by the regular bureaus, and these, no matter how honest and willing they may be, are usually utterly unsuited to the work. We should have specially trained tuberculosis nurses throughout our sanatoria; nurses who have themselves been patients in similar institutions, who understand the problems of the patient as well as those of the sanatorium; who can bring to their work not only efficiency but sympathetic efficiency. We are working toward this problem by taking women who have been patients and giving them six months' training in the sanatoria preparatory to employing them there

as trained attendants. The plan has many advantages. For the women it offers better living conditions, better working hours, and better wages than their old employment in the shop or at housework. For the sanatoria it should in time secure sympathetic and intelligent care for all our patients.

THE OUTLOOK.

The final control of tuberculosis will require far more than the proper management of a few sanatoria, and if the State Tuberculosis Commission would continue to justify its right to existence, its field of labor must be greatly broadened. Since the beginning of the Commission its members have endeavored to further the educational campaign by the distribution of literature in schools and factories; by lectures before churches, schools, and public gatherings, and by the organization of local associations to carry on the work in the many cities and towns of our state. Last winter, through our Christmas seal campaign, we were able to so extend this movement as to increase the number of these local organizations from twenty to fifty-seven. The work should be steadily pushed until every city, town, or group of adjacent villages should have a voluntary organization whose object is to combat tuberculosis in its territory. These should see to it that the educational campaign is developed to its fullest extent, and should provide the funds for relief work among their own needy cases. Back of these local organizations, advising, aiding, and stimulating their activities, should be the State Tuberculosis Commission as a central agency with a secretary who would be at the call of any community and through whom the commission could keep in touch with local conditions as to housing, industrial conditions, child welfare work and similar problems intimately associated with the control of tuberculosis. Of greatest importance would be the opportunity to extend the work of the tuberculosis dispensary and special visiting nurse. We can never control the disease by waiting to treat the well developed cases in sanatoria or hospitals. The real work to be done is one of prevention, and this can only be done in the homes of the people. We need a competent corps of tuberculosis visit-

ing nurses to visit the homes where tuberculosis has developed, persuade the active cases to go to our sanatoria and hospitals for training, bring the sickly, backward and predisposed children under the care of the local associations, and teach the mothers in these homes the supreme importance of sunlight, air, cleanliness, and wholesome food. The vital statistics of the towns where this local work has been in force for the past few years are indisputable evidence of its value. There is no expenditure which would give the state so great a return, not only in reduction of her tuberculosis death rate, but in its wide influence on the general public health, as money expended in forwarding this work. We hope some day to see the development under whatever commission may then be directing the tuberculosis work of a system of dispensaries and visiting tuberculosis nurses furnished by the state and coöperating with a system of local tuberculosis organizations whose part would be to furnish funds for relief work among their own people.

To pave the way for this development we asked this year for legislation which would specifically authorize us to maintain such a central office, but felt that the financial conditions did not justify our asking the state to embark upon the dispensary plan at this time. Our request was not granted, and for the next two years we must make out as best we can. We trust, however, that we will be able to show a sufficient development of this all-important work to justify some further advance in the state's endeavors towards the control of tuberculosis.

DISCUSSION.

DR. STEPHEN J. MAHER (New Haven): Dr. Lyman's paper has been really a résumé of the work that he and I have been doing and I am afraid the programme committee made a mistake in asking me to discuss it. I could not criticise it without finding fault with myself. I could not tell you of all the good things that Dr. Lyman has done and how important he is to the Commission without making you think that we were a mutual admiration society. But I endorse heartily what Dr. Lyman has said and I can only add that I wish the doctors of the state would take more interest as doctors in the sanatoria. I wish that they would come to see our places oftener individually or in groups or in societies.

Why couldn't various county or local societies have a meeting occasionally at one of our sanatoria? Your visit would be enlightening to yourselves and helpful to us. We would be very grateful for any criticisms that you would have to offer and I am sure that the work would benefit by having some of the facets looked at afresh by doctors whose sense of proportion has not been dulled by struggling with the problems day after day.

And now as to our troubles with the recent General Assembly, and our complaints of the pettiness of some of its members: we should always remember that Connecticut is spending a great deal of money for the care of its tuberculous citizens and for the stamping out of tuberculosis, and that in its four sanatoria it has institutions comparable with those of any other state or community. Come and see them. They will give you a new pride in Connecticut.

DR. WALTER R. STEINER (Hartford): *Mr. President and members of the Society:* We should take great pride, I think, in the work which the State Tuberculosis Commission has accomplished and will accomplish as so thoroughly outlined by Dr. Lyman, in his paper. To those of us who have followed closely the workings of this commission, it is also gratifying that those interested in tuberculosis outside of the state are pleased with the work done and hopeful of further progress in the amelioration of tuberculosis in Connecticut. I speak with some knowledge, as for five years I was a director of the National Association for the Study and Prevention of Tuberculosis and for three of those five I was on the executive committee.

It should also be a source of immense satisfaction that the efforts of the Connecticut Senate to cripple the work of the commission by changing its personnel was unanimously defeated recently in the Assembly, thanks to the labors of Dr. Griswold, the Chairman of the Committee on Public Health and Safety, and Mr. Shaw of Redding. It should be the purpose of each member of our State society to become better acquainted with the commission's work and support it in its aim to lessen the mortality of this dread disease in Connecticut.

DR. WM. H. CARMALT (New Haven): I happened to learn something of the work of this commission in the investigation that the Legislature called upon the so-called economy commission to make and I beg to say that our investigation there showed that the work was being done as economically as it could fairly be expected to be. We could find no evidences of undue waste; no duplication of work, and altogether the work of the tuberculosis commission seemed to be remarkably well carried out. I heartily endorse what Dr. Steiner has said with regard to what he hopes the members of this society will do by asking their

individual legislators to take sufficient interest in this work to prevent any such absurd legislation as was attempted at the closing of this last legislature; on the last day of the session a bill was introduced to turn the commission in a political direction. Fortunately it was prevented by the action of the State Committee on Public Health and Safety. I have been to the institutions at Undercliff and at Norwich, and I could not see any evidence of waste.

DR. DAVID R. LYMAN (Wallingford): I don't think I have anything to add, Mr. President, except to say amen to what you said as to our desire for a closer coöperation of the medical profession all over the State and as to our need for it. This has been a great handicap in the development of the work. For example, at the Shelton Sanatorium a great many doctors down in that section are still confusing Shelton Sanatorium as it is with the Shelton Sanatorium two years ago with that old patched up building as an infirmary, and advising patients not to go there; when if they had seen the conditions as they are now they would give far different advice. I think nothing could be of greater benefit to us than to have the physicians who can't get around to the State Sanatoria to search out and run through the institution nearest to them and then let us have their constructive criticisms on the work and what they think would be a benefit to the institutions and the work at large.

The point we made when the question of putting one man in charge of the work came up was that we didn't believe they could find any three men who could cover the whole work without need of outside advice. Any coöperation we can get from the medical profession of the state will be of the greatest assistance to us in this work.

Foci of Infection in Chronic Arthritis.

PAUL P. SWETT, M.D., F.A.C.S., HARTFORD.

It is the object of this paper to report the author's statistics concerning the relative degree of frequency of the various underlying foci of infection in chronic infectious arthritis, as tabulated after a careful study of cases seen in private practice. In spite of an immense amount of investigative work and a widespread appearance of articles dealing with this subject from one aspect or another, there still exists a lamentable lack of appreciation, by the profession as a whole, of the exact nature of the various chronic non-tuberculous joint diseases. On this account it seems desirable that certain definitions be here inserted in order that we may clearly understand one another.

Very unfortunately for this purpose there are such a variety of terms and classifications in use that the same disease has been and is often referred to under several different terms and, moreover, to any and all joint lesions the prefix rheumatic has a most tenacious tendency to cling. In fact this term is doubly unfortunate since it is now quite apparent that there is no definite disease entity to which this word is applicable and its retention tends to clog the wheel of progress and to serve the charlatan as a bait for the destruction of the unwary, besides being a cloak for the ignorant. Dismissing from the mind, temporarily at least, all remembrance of this term, it may be said that, following the classification of Goldthwait, there are of the chronic non-tuberculous joint diseases four main groups,—Chronic Infectious Arthritis, Chronic Hypertrophic Arthritis, Chronic Atrophic Arthritis, and Chronic Villous Arthritis. It is at once apparent that such a classification is far from perfect, embodying as it does pathological and etiological distinctions. It is only fair to say, however, that this classification is now over eleven years old and that it was apologized for by its originators as being undesirable from this viewpoint. As a working basis and as a stimu-

lation towards more exact differentiation, however, this grouping of these diseases has been of the utmost value and should be continued, for the present at least. In order to have clearly before us what the term chronic infectious arthritis is intended to cover the following brief definitions are submitted.

Chronic Hypertrophic Arthritis is a chronic inflammatory joint change which may or may not be polyarticular, characterized by a slow insidious onset, marked bony thickening of the joint surfaces and a tendency to terminate, after years of discomfort, with moderate deformity and ankylosis. This disease is of traumatic origin, the bony thickening being the result of the trauma of accident, overuse, or strain incidental to functional use. It is seen most often in middle or late life and is usually unaccompanied by any constitutional disturbances. Its principal distinguishing features, therefore, are its insidious onset, lack of constitutional changes, lack of febrile reaction and tendency to occur in elderly people. Familiar examples of this disease are Heberden's Nodes and Morbus Coxae Senilis.

Chronic Atrophic Arthritis is the term applied to distinguish one of the less common chronic non-tuberculous joint diseases. This disease is not well understood, but its predominating pathological change is one of atrophy of the cartilage, proceeding in places to the extent of erosions. This cartilaginous change is followed by extensive atrophy of the bones and this is occasioned partly by the disuse of the joint and partly by the disease itself. This disease occurs in the races in whom civilization has reached its highest development and it seems to be the result of shock, worry and fright.

Chronic Villous Arthritis is probably associated with one or the other of the chronic non-tuberculous arthritides as a manifestation of the early stages of such disease. It is scarcely distinguishable from chronic infectious arthritis, but there are undoubtedly some types of this trouble not dependent upon infectious lesions. In the writer's experience it has seemed that villous changes consist of enlargements of the inner layer of the synovial membrane following remotely after a traumatic synovitis or developing gradually as a result of static defects. The knee joints are

most often attacked and the condition is manifested by moderate swelling and synovial distension and marked crepitation on motion. Lipomatous changes occurring in these villi cause further enlargements and pain and swelling result from the mechanical interference to motion they cause.

Chronic Infectious Arthritis is one of the most distressing disabling diseases imaginable. It drags on for months and years, gradually destroying the joints, crippling the limbs and causing continuous pain, suffering and disability. Pathologically this disease is characterized by a destructive arthritis involving all the joint structures, causing atrophy of the synovial membrane, erosions of the cartilage, rarefaction and necrosis of the bone ends, atrophy of the diaphyses, terminating in flexion or extensive deformities of the limbs and joint ankylosis. All the time that this destruction is going on there is a constant constitutional toxæmia manifesting itself by fever, rapid pulse, and anæmia. Patients thus afflicted present all degrees of invalidism, from being merely troubled by one or more painful joints to being bed-ridden skeletons with deformed joints and bedsores on trunks. This distressing disease is the more common of the joint diseases here considered. It has been known under such terms as rheumatoid arthritis, chronic articular rheumatism and, most popularly, arthritis deformans. Since the publications of Goldthwait, Painter, Fayerweather and others about 12 years ago, there has been abundance of evidence that this disease is of infectious origin. The joints may be the seat of the infection or they may be irritated by the products of bacterial invasion in some distant focus. The work of Billings and Rosenow indicates that the bacteria can usually be detected in the joints, or in the surrounding glands and muscle tissues.

Realizing, therefore, that this disease is the consequence of definite infection, that the source of this infection lies in some distant seat of pyogenic activity, it at once becomes apparent that it is extremely important to have some knowledge of the various seats of such foci of infection; also, if possible, to know the relative degrees of frequency with which one may expect such foci to operate; and furthermore, it is advantageous to know

how and under what conditions the infection is conveyed to the joints and how it proceeds when it has thus arrived. These questions can now be answered with fair accuracy.

Another question which will naturally suggest itself concerns the probability of being able to determine the focus by reason of the type of joint reaction and such men as Brackett are beginning to classify the types in relation to etiological foci and they feel that with further study it will be possible to put this feature of the situation on a definite working basis.

According to Billings the method of systemic infection from foci of infection consists in the passage of the infective agent from the focus to other tissues through the blood stream. Of the pathogenic bacteria, streptococci, pneumococci and staphylococci are most commonly found in examinations of the tissues and exudates about the foci. Gonococci may be found in infected Fallopian tubes, seminal vesicles and so forth. Occasionally the tubercle bacillus is found in tonsillar and peritonsillar tissues. Colon mixed infection may occur anywhere. Apparently a certain amount of transmutation of species often occurs in the organism of such a focus and a pathological specificity for certain tissues develops so that strains obtained from patients suffering from chronic arthritis produce arthritis in the inoculated animal. Strains obtained from patients with acute arthritis, endocarditis and pericarditis cause similar changes in the inoculated animal.

The bacteria thus produced in a focus being arrived at a joint are conveyed to the terminal arterioles, where they form embolic masses which, being surrounded by endothelial proliferation, the lumen of the arterioles becomes occluded. Nutrition to the part thus being cut off, degenerative changes take place and, moreover, as a low oxygen medium is best suited to most of these growths, the conditions are exactly adapted to a continuance of the process. Hence, as Billings says,—“the peculiar characteristics of the mode of infection, the diminished blood supply to the tissues, the resulting morbid anatomic change and the suitable mediums for continued viability and growth of the infectious agent, explain, in part at least, the progressive nature and the difficulty of successful management of arthritis deformans.”

Concerning the location of these foci of infection it may be said that they may exist anywhere in the body. The most frequent site is in the head in the form of alveolar abscess, deep tonsillar or peritonsillar abscess and chronic sinusitis. Cholecystitis, appendicitis, submucous abscess anywhere, salpingitis, vesiculitis, and prostatitis are the most common. Moreover, secondary foci in lymph nodes proximal to the primary focus and to the infected joints become additional sources of continued and more general infection.

In one hundred cases seen in private practice the percentage of occurrences of the various foci is herewith presented:

	PER CENT		PER CENT
Tonsils	62	Pulmonary Tuberculosis....	2
Alveolar Abscess	7	Anal Fissure	2
Sinus Disease	3	Cholecystitis	2
Vesiculitis	5	Appendicitis	1
Salpingitis	2	Otitis Media	4
Gonorrhoea	6	Unknown	2
Lues	2		

These figures are given with the thought that they may serve as a basis for further observation and not with any idea that such a small number of instances can or do furnish the reliable data that might be gathered from a larger series collected by a number of observers. The element of personal bias and prejudice naturally enters into any such compilation and this can be checked only by averaging the percentages of a large number of individuals working under all sorts of conditions and in various localities. The fact that 72% of the foci were located in the head is a striking confirmation of Billings' statement that most such foci are to be found in the head, and when it is realized that 62% were of tonsillar origin there is seen a certain justification for the dictum that in the failure to demonstrate a definite focus of infection in a given case, one is justified in removing the tonsils as a therapeutic test.

In regard to the all important question of the tonsils it can not be too frequently repeated that tonsillectomy and not tonsillotomomy is the only sure means of removing a tonsillar focus. In fact, it has happened several times in this series that a tonsil-

lectomy was required some years after a tonsillotomy because the scar tissue had sealed in a deep tonsillar abscess so thoroughly that absorption necessarily resulted.

More exacting examinations of the mouth and teeth will probably reveal a larger percentage of such foci in the future since by the aid of good radiographs many instances of alveolar abscess are now detected which would in the past have defied a less accurate examination. It has been our custom in all cases where the teeth could possibly be suspected to have them attended to before resorting to tonsillectomy, even when it seemed fairly certain that the tonsils were at fault.

In regard to the seminal vesicles, it is quite likely that the future will show a larger proportion of foci here than this table includes, because of the newer and more exact methods of examination.

The figures here given, therefore, are likely to be altered chiefly by a diminution in the tonsillar group and an increase in the sinus, teeth and seminal vesicle groups.

In two per cent of these 100 cases no causative factor except pulmonary tuberculosis could be determined and yet, in spite of the teachings of some of the French who declare that this is of frequent occurrence, it does not seem to me that the type of disease commonly understood by us can be accounted for in this way. Rather, it would seem that the lowered resistance incident to the tuberculosis allows some relatively insignificant focus an opportunity to exert an effect which otherwise it could not have accomplished.

Congenital or acquired syphilis probably plays a similar rôle and in a still more marked degree. In addition to the two cases here tabulated in which no other cause could be determined, there have been observed 6 other cases wherein a failure to improve after the removal of a supposed focus has caused further investigations to be carried out. In all these cases either positive serum reactions or definite past histories have denoted the existence of syphilis and marked improvement has resulted in each instance from the effects of syphilitic treatment. It is altogether likely that the continuance, at least, of the joint lesions has been caused

in these cases by the lowered resistance resulting from the associated syphilis, if not indeed made possible originally by such lowered resistance.

This phase of the subject of focal infections in chronic arthritis is so important that the following cases are reported briefly as illustrating the necessity for further studies along these lines:

Case I.—The first case is reported because it illustrates the part syphilis may play in a disease which we can not definitely declare to be of syphilitic origin. In this instance there can be no doubt about its having been, at the least, a very important contributing factor in the prolongation of a chronic infectious polyarthritis. J. D., a farmer aged forty, suffered a mildly acute onset of arthritis in the hands, shoulders, feet and knees. For a year he sought various cures and worshipped at many shrines, all to no avail, and in 1910, he was seen at the Hartford Hospital, where he occupied a wheel chair and suffered from a typical chronic atrophic arthritis of the above-mentioned joints. A very profuse pyorrhoea was treated and great improvement resulted therefrom. This permitted the patient to get about, though he still had pain and swelling and much joint deformity. For some reason, a fellow-practitioner prescribed Fowler's Solution in increasing doses and a marvelous improvement was noted. He again applied to me for the purpose of finding some substitute for the Fowler's Solution, because, he said, he would almost get well and then the medicine would cause a diarrhoea and he would be obliged to drop it. He was sure that if he could take enough of it, he would get well. This seemed a sufficient clue and adequate specific treatment produced a complete cure in a few months.

Realizing the importance of syphilis as an underlying factor in the etiology of bone lesions, this case suggests the possibility, not that the polyarthritis resulted directly from the effects of spirochaete, but rather because of the lowered resistance of the patient, due to the lues.

Case II.—T. F., aged thirty, a machinist, was first seen February 24, 1912. He had been suffering from a chronic infectious arthritis of the wrists, ankles, knees, hips and cervical spine, for about one and a half years. The acute inflammation in the joints had subsided and they were solidly ankylosed in the fully extended position. An effort to mobilize the left knee under ether, resulted in a fracture of the femur, which healed promptly. The left wrist was mobilized by force, without difficulty, however. I saw the patient again in August and found he had been taking a patent medicine, called rheumacide or chloriodophen, by intramuscular injections, administered by his wife. He had been greatly improved by this treatment, generally and locally—the ankylosed joints

having regained fifty per cent of their normal mobility. Upon inquiry of the Journal of the American Medical Association, I learned that this preparation consisted of 2 parts tinct. of iodine, 2 parts carbolic acid and 6 parts glycerine, approximately. The patient then admitted having had a chancre excised about ten years previously. He was therefore put on efficient treatment by means of Salvarsan, mercury and iodines, and he improved to such an extent that he was able to sit in a chair and use the joints to a limited extent. I am wholly unprepared to hazard any guess as to the relationship of this patient's chancre and his poly-arthritis. I felt quite certain that the latter had resulted from an old epididymitis, but the remarkable improvement in the firmly ankylosed joints, following specific treatment, certainly suggests that some part of the process was syphilitic in nature.

Case III.—Mrs. J. F. P., aged fifty, was first seen in October, 1912. She had a very severe chronic infectious arthritis, involving the knees, wrists, hands, left ankle and left hip, which had begun a year previously. As no focus of infection could be found, she was put on an expectant plan of treatment for six months and, though her general condition was greatly improved, the intensity of the joint process was not affected. In March, 1913, a negative Wassermann and positive Luetin decided us to begin specific treatment, and in a month the joints were greatly improved. This improvement has been followed by a slow, but steady convalescence, and she is now entirely recovered, except for the mechanical limitations of the partially destroyed joints.

If we could assure ourselves that there had existed no focus of infection in this case, we could assume that the syphilis was the sole cause. However, it may be that the improvement in the patient's general resistance under treatment was sufficient to permit her to throw off some hidden focal infection.

DISCUSSION.

DR. GEORGE BLUMER (New Haven): *Mr. Chairman and members of the Society:* We are greatly indebted to Dr. Swett for calling our attention once more to the great necessity of searching for minor foci of infection in the chronic cases of joint disease that we classify for the present under the heading of arthritis deformans, for want of a better name.

There are three kinds of evidence that suggest to us that this particular group of cases are of infectious origin. In the first place clinical evidence, and in the second place bacteriological evidence, and in the third place immunological or serological evidence.

It is hardly necessary to state to you that the natural history of a great many of these joint cases is the natural history of an infectious disease. That is particularly true of the febrile cases and especially true of the particular group of cases which occurs in childhood, so-called Still's disease, in which we get not only involvement of the joints and fever, but also considerable glandular enlargements and enlargement of the spleen.

Aside from the purely clinical point of view we have inferential evidence of infection, clinical evidence, which occurs in two forms. In the first place there are a limited number of these cases where a patient gives a history which directly connects the appearance of the joint symptoms with an infection of some sort. In looking over the records of the forty-five or fifty cases that I have seen in the past few years I found a certain number that gave such a history. One woman for example gave a history that the joint trouble immediately followed upon an infected hand. One or two other cases gave a history of the joint trouble immediately following tonsillar infection, just as acute articular rheumatism frequently follows tonsillar affections. Another gave the history of joint trouble following an attack of acute enteritis.

Then we have a second group of cases, which is a much larger group, in which the patient does not give the direct history, does not give the history of the infection immediately following a joint trouble but in which we find somewhere in the patient a focus, usually a minor focus or infection. In looking through my own cases I find a great many with infected tonsils, a great many with pyorrhea, some prostatic cases, some appendix cases, one or two intestinal cases aside from the appendix, one or two cases with a history of dysentery, one or two with a history of mucous colitis, also patients with chronic bronchitis, pyelitis, metritis, and one or two with chronic pulmonary tuberculosis.

Now with regard to the direct bacteriological evidence obtained by taking cultures in these patients from the joints themselves, from the muscles in the neighborhood of the joints, from enlarged glands in the neighborhood of the joints, and from the blood, as you probably know, attempts have been made for a great many years to isolate organisms from these cases, the same as they have been made in acute articular rheumatism, and as you know the results have been extremely diverse and up to within a few years extremely unsatisfactory, probably in the main because the observers had not developed the proper technique for the isolation of the organisms.

The man who has been the most successful in isolating organisms in this group of cases is Dr. Rosenow of Chicago, and he has attained this degree of success, in my opinion, on account of the fact that he has developed a special technique of his own. Probably the discovery that has had the greatest importance in permitting him to isolate organisms

where others have failed or partly succeeded has been his discovery of the fact that these organisms develop special growth characteristics especially in their relation to the oxygen, and the matter of oxygen tension has a very important bearing on the matter of growth capacity. Dr. Rosenow has now worked over a very considerable number of cases bacteriologically and he has been able to isolate a variety of organisms from a large percentage of them. A certain percentage have remained sterile in the hands of everybody who has worked on the subject. He has found most frequently the so-called streptococcus viridans but a number of the other pyogenic organisms have also been recovered.

Then in the third place the immunological evidence which has been brought forward—in this work Hastings of New York has been prominent—has to do mainly with so-called complement fixation tests similar to the Wassermann test in syphilis. Hastings complement fixation tests, it seems to me, confirm very closely the bacteriological tests which have been made by Rosenow and others. He has shown for example that the streptococcus viridans is the organism most commonly present in joint cases. The gonococcus is not infrequently present, and the ordinary pus cocci. I will not emphasize the question of the relation of syphilis to these cases because it has already been emphasized by Dr. Swett.

Just a word in connection and that is this, that I think we must accept some of the bacteriological evidence with a certain amount of reserve. In connection for example with the finding of the gas bacillus, and in connection with the finding of diphtheroid organisms we must not forget that we are dealing with groups of organisms that are extremely widespread in nature. I think it is rather suggestive that these diphtheroid organisms have been recognized in so many other diseases lately. I think the fact that they have been so widely discovered rather suggests the possibilities that they are not the real cause of a good many of these things. We are simply dealing with a very widespread organism which gains entrance to the body and is capable of living in the body and perhaps is not really the cause of any of these infections, apparent infections, with which it seems to be associated.

DR. WM. PORTER, JR. (Hartford): There is hardly any question of diagnosis so interesting nowadays as the search for the source of infection in those cases of infectious arthritis.

We have grown accustomed to a careful examination of tonsils, sinuses and so on, but now if we must add syphilis to the list of possible causes, whether a direct or only a predisposing cause, the situation becomes more complicated still. If accepted as a predisposing cause only, there can hardly be a satisfactory recovery without the necessary treatment of the syphilis.

The paper first read is very interesting and important. There are a great many sufferers from this disease in its various forms and degrees, and our present knowledge of the etiology is such that no physician should feel satisfied in any given case until the last stone has been turned in the search for the final cause. I strongly endorse the writer's conclusions and urge every physician in charge of such cases to use every means to discover the cause.

DR. WM. S. BARNES (New Haven): I think that in all of these cases of arthritis we have as an underlying cause some infectious organism. The gonococcus is an especially prominent organism which might be an attributing cause as well as a direct cause.

I have in mind two cases which illustrate my contention. One in which the infection came on in the joint of the hand within six days after the acute infection. The other case was the involvement of the knee joint by an infection within a short time after treatment had been instituted for a chronic gonorrhea. In this case I was of the impression that the massage of the prostate caused the liberation of some of the organisms into the blood with the resulting arthritis. This case was treated with mixed vaccine and it did very well.

I think the subject a very interesting one and demands considerable attention from men doing all branches of medical work.

DR. J. W. FISHER (Middletown): During the past winter the institution with which I am connected had an epidemic of sore throat characterized by varying symptoms, enlarged cervical glands being a very prominent feature. Cultures from these cases showed a pure growth of a haemolytic streptococcus. In fifteen of these cases there followed an acute articular rheumatism. Erysipelas was also a very frequent complication. The rheumatism and erysipelas followed so quickly upon the attacks of septic sore throat that there can be no question of the responsibility of the streptococcus. Some twenty-five of the sore throats were treated by autogenous vaccines in large doses during the acute stages. In the cases treated in this way the duration of the disease was much shortened and there were no sequelae either in the joints or elsewhere.

DR. WM. H. CROWLEY (Hartford): I want to compliment Dr. Swett on his very instructive paper this morning. I was especially pleased with Dr. Blumer's remarks, of New Haven. Two years ago I had the pleasure of being with Dr. Rosenow in Chicago and saw him work out his technique at the laboratory there. After coming back to Hartford two years ago I read a paper in regard to the transmutation of streptococci and streptococci viridans and it is pleasing to me now

to see the position that these gentlemen are taking because at that time two years ago it was rather questioned and I am therefore pleased this morning to hear Dr. Blumer.

DR. DANIEL F. SULLIVAN (Hartford): Perhaps that particularly interests those who are doing surgical work. I had the pleasure of hearing Dr. Billings read his paper on arthritis deformans in Chicago at the time that Rosenow read his epoch-making paper on the transmutation of streptococcus to streptococcus viridans. Therefore it is particularly interesting to me. The paper of Dr. Billings was discussed by Dr. Murphy. He agreed with everything Dr. Billings stated in regard to arthritis and its causes but Dr. Murphy called attention to the fact that he did not mention what the surgeon could do in preventing the awful results we see in true articular infection. He was listened to with great attention for twenty minutes and I believe that two hundred and fifty surgeons who were there all adopted Dr. Murphy's treatment of the joints by his formula of glycerine injection.

We are using that in St. Francis Hospital and in the cases of infected joints on which we used the injection we were rewarded with very, very good results.

The astonishing statement, or the statement that appeared to me as astonishing, was the fact that we all know the frightful percentage of cases of gonorrhea in every community and we also know that the peculiar potentiality of that infection causes frightful end-results, but if you remember correctly Dr. Swett stated that in this series of cases reported in Dr. Billings' paper that the number was six per cent. I believe there is a reason that we might give, with a certain amount of probability, why this percentage is found to be so low, and that is almost the impossibility of detecting the Neisser infection of the joints. It is claimed by a good many that they can, but on what study I have given this particular subject I find with some of the Chicago men, I think it is almost impossible to find a Neisser infection in the joint to-day, and that is possibly an explanation of why the percentage of cases is so small.

DR. A. S. BRACKETT (Bristol): We have symptoms of spinal meningitis. That is, they describe the chief symptoms of the disease which we are told now includes a great many cases some of which have absolutely no infection of the cerebrum or of the spinal chord. Now I believe some of these cases that have been discussed are really cases in which we describe the chief symptoms, that is the joint symptoms. That comes under the infectious type. I would like to ask Dr. Swett if he would give some of the other symptoms which we as general practitioners see more often than general joint symptoms. I know in cases I have

had that have been operated on and tonsils removed, I find that the general health improves, I find that the muscular symptoms improve, and I find that other symptoms improve which were really just as much symptoms of the disease that have been discussed as the joint symptoms were. I would like to ask Dr. Swett what his observation was along that line.

DR. ANSEL F. COOK (Hartford): I want to thank Dr. Swett for his valuable paper, which is orthodox and up-to-date. On the other hand the question is a very complicated one. All people who have gonorrhea, diseased tonsils or pyorrhea do not develop infective arthritis, and others who do have infective arthritis have never had gonorrhea, diseased tonsils or pyorrhea. I think we are on the right track but I don't think the matter has been settled yet.

DR. R. A. McDONNELL (New Haven): There is nobody who doubts that the gonococcus is capable of causing an inflammation of the joints, but it has seemed to me that its etiological value is exaggerated in the minds of most men. From the personal experience which I have had with gonorrhœa cases, and it is not with any desire to boast that I say that I have seen some thousands of cases of gonorrhœa in the last twenty years—I don't believe that in my practice or observation that there have been ten cases of so-called rheumatism in the lot.

The few cases that I have had of gonorrhœal rheumatism have really been very severe, very bad infections. There may have been cases that developed after the patient had left me, but in my observations gonorrhœal rheumatism is an exceedingly rare complication of gonorrhœa. When they talk about six per cent. of the cases having been of gonorrhœal origin it would be interesting to know what percentage of all gonorrhœal patients develop rheumatism. I think it must be an exceedingly small proportion. A great many persons have this fear that they will have stiff joints from gonorrhœal rheumatism as the result of an infection of gonorrhœa. I think their chances of getting it are almost negligible.

DR. WILDER TILESTON (New Haven): In regard to Dr. McDonnell's remarks, the reason that he has seen so few cases of gonorrheal rheumatism may be partly because his treatment has been so good and thorough. (Applause.) You can see such cases almost any day in any dispensary or general hospital. They are certainly exceedingly common in hospital practice where the patients have usually been treated badly or not at all. We look for the gonococcus in all cases of acute or subacute polyarthritis which do not respond promptly to the salicylate treatment, and very often we find it.

DR. THOS. M. HEPBURN (Hartford): I would like to suggest in regard to the gonococcus that it is the original cause in many cases. There are

a certain portion of cases in which the gonococcus is not found. I refer especially to vascular cases. After a number of days the gonococcus dies out and its place is taken by secondary infection and I think that secondary infection is probably responsible for a great number of joint cases complicating chronic vesiculitis and in these cases you would not find the gonococcus in the joints.

DR. PAUL SWETT (Hartford): These figures that I presented were obtained in one hundred cases of my own, not hospital cases but private cases, and the figures are taken from the study of the end-results after treatment had been carried out. There are a good many other cases in which the result of treatment has not been definitely determined or which I have lost sight of. Therefore I feel perfectly sure, as I said in the paper, that these figures are not to be accepted as final at all. They are presented with the idea of suggesting the proportion of possible etiological foci in the chronic infectious arthritis.

Of course a tremendous amount of confusion obtains because of the fact that chronic infectious arthritis is to-day mistaken for chronic hypertrophic arthritis or chronic villous arthritis or chronic atrophic arthritis, and I am perfectly sure that if the differentiation of these four groups of chronic arthritis could be instilled into every observer's mind there would be a great deal less confusion in the future about foci of infection in chronic infectious arthritis.

Carbohydrate Indigestion.

WILDER TILESTON, M.D., NEW HAVEN.

Carbohydrate indigestion is, strictly speaking, not a disease but a functional disturbance, which may occur by itself, or as a complication of disease of the alimentary tract or of other parts of the body. Scattered references to faulty digestion of carbohydrates are to be found, under the headings gastric ulcer, meteorism, etc., in the current text books on diseases of the stomach and intestines, but the subject is, so far as I am aware, nowhere treated as a whole in a comprehensive way. Yet the condition is very common and responds readily to a proper regulation of the diet.

The discussion will be limited to the carbohydrate indigestion of adults, since the condition as it affects infants forms a subject by itself.

There are distinct limits to the tolerance for carbohydrates, proteins and fats. These limits vary widely in different persons, and in the same person at different times. When the amount in the diet of one of these forms of food exceeds the limit of tolerance, then either disturbance of digestion, or of absorption, or both is the result.

Indigestion of various kinds is perhaps more often due to a diet unsuited to the individual than to any other cause.

The symptoms of carbohydrate indigestion are the result of fermentation, with the formation of various gases (chiefly CO_2 and CH_4) and volatile fatty acids. For fermentation to take place three factors are necessary: (1) the presence of suitable micro-organisms, (2) a proper medium for them to work upon, and (3) more or less stagnation of the contents of the stomach or intestine, in order that the organisms may have sufficient time for action. A great variety of organisms may give rise to gaseous fermentation, among which the yeasts and various bac-

teria are the most important. Kuhn and Strauss¹ have shown that hydrochloric acid does not inhibit the development of yeast cells. Gaseous fermentation is met with in the stomach, according to Riegel,² especially in cases of dilatation with normal or increased amounts of hydrochloric acid, though it may occur in the absence of hydrochloric acid. In the case of the intestines the colon is the chief seat of gas production, on account of the abundance of micro-organisms there and the stagnation of the contents.

The exact causes of carbohydrate fermentation remain obscure. In the stomach, hyperacidity might be a factor by interfering with the action of the salivary diastatic ferment. In the large intestine the presence of undigested or partially digested starch is probably the most important feature, for sugars are invariably absorbed higher up in the canal. The micro-organisms are probably always present and only await a suitable opportunity for their activity.

The faulty digestion of starch in the intestine might be due to an insufficiency of the diastatic ferments, or, as A. Schmidt³ suggests, to a defective digestion of the cellulose which forms the outer envelope of the starch cells, and must be removed to allow the digestive ferments access to the starch within.

SYMPTOMS.

The symptoms of intestinal fermentation are chiefly those due to distension with gas. The milder cases complain only of a sense of fulness or discomfort coming on several hours after meals, and of flatulence. The higher degrees of tympanites are accompanied by colicky abdominal pain, sometimes severe, and relieved by the passage of gas. The seat of the pain varies according to the part of the intestine affected; it may be general, or located in the right iliac region, or the left side of the abdomen.

¹ Kuhn & Strauss, quoted by Riegel in *Diseases of the Stomach*, Nothnagel's Practice, American Edition, 1903, p. 123.

² Riegel, *Dis. of the Stomach*, in Nothnagel's Practice, American Edition, p. 403.

³ Schmidt, A., *Klinik d. Darmkrankheiten*, p. 199.

Pain is more likely to occur if there are adhesions which are pulled upon, as in the case of distension of the cecum with adhesions from chronic appendicitis. Sometimes the acid products of fermentation irritate the bowel to such an extent that diarrhea results, the so-called fermentative dyspepsia of Adolf Schmidt. The movements are then frequent, acid, and foamy from the admixture of gas bubbles.

Gastric fermentation gives rise to distension of the stomach, which is relieved by belching. Heartburn is another common symptom in this condition, and one that is relieved by diminishing the amount of carbohydrates in the food. Whether, however, the carbohydrate indigestion is secondary to the hyperacidity, or causes it by the irritating products of fermentation, remains an open question.

DIAGNOSIS.

Since abdominal distension is the principal symptom of carbohydrate indigestion, it becomes necessary to consider all the causes of tympanites. These are four, viz., (1) increased gas production, (2) mechanical obstruction of the intestine, (3) the so-called paralytic ileus, or obstruction due to paralysis of the gut, and (4) deficient absorption of gas from the intestines. Mechanical obstruction can only give rise to doubt in cases of chronic and partial obstruction; here a careful inquiry for previous inflammatory abdominal disease, and examination of the abdomen for tumor, visible peristalsis, and intestinal rigidity (*Darmsteifung* of the Germans) will usually solve the question, though X-ray examination may be necessary before a final decision is reached. In paralytic ileus the symptoms are those of acute intestinal obstruction, usually associated with acute general peritonitis or following an abdominal operation. It is obvious that such a condition does not in the least resemble distension due to fermentation.

Tympanites from decreased absorption of gas is a rare condition, met with chiefly in the aged, and presumably due to arterio-sclerosis of the mesenteric vessels. The diagnosis can be made, with some reserve, in arterio-sclerotic subjects with distension for which no other cause can be assigned.

After the exclusion of other sources of tympanites, that due to increased gas production remains. It is by far the commonest cause of distension. It may be the result of fermentation of either carbohydrates or proteins, but the carbohydrate fermentation is much the more frequent of the two. Therefore it will be proper in a given case to limit the carbohydrates in the diet, and base the diagnosis on the results of treatment. A more certain opinion, however, can be reached by the examination of the feces. The reaction is perhaps the best single guide, an acid stool pointing to the carbohydrates, and alkalinity to the proteins, as the element at fault. The presence under the microscope of undigested starch granules, as shown by the iodine test, is additional evidence of carbohydrate indigestion, while a foul odor points with certainty to the putrefaction of proteins. The presence in the urine of large amounts of indican, or phenol, or both, also indicates increased protein decomposition.

The fermentation test of Schmidt⁴ is useful, though seldom indispensable. It consists in measuring, by means of a simple apparatus, the gas produced by a definite amount of feces when incubated for twenty-four hours in a thermostat, the reaction being taken before and after incubation. If the reaction becomes more acid, the fermentation involves the carbohydrates, if more alkaline, the proteins.

The fermentative diarrhea of Schmidt is easily recognized by the examination of the stools, which are mushy, acid, mixed with bubbles of gas, and contain undigested starch. Though the movements are increased in number, it is not, strictly speaking, a diarrhea, for the water content is not increased.

When belching is the principle symptom it is necessary to determine whether the gas is swallowed or formed within the stomach. Cribbing, or the swallowing of air, is to be suspected when there is a history of a very large amount of gas brought up in a short space of time. On watching the patient, swallowing movements may be noted at frequent intervals, and the belching will be prevented by the wearing of a piece of cork between the teeth. If the gas is formed within the stomach, it may be due

⁴ Schmidt, A., *Klinik d. Darmkrankheiten*, p. 100.

to simple carbohydrate indigestion or be secondary to obstruction of the pylorus or atonic dilatation of the stomach. The latter conditions may be distinguished by the use of the stomach pump, and of the X-ray. Belching in a fat person is always suspicious of carbohydrate indigestion, for serious disease of the stomach almost always leads to loss of weight.

TREATMENT.

The treatment of carbohydrate indigestion is mainly dietetic. It consists in a marked reduction of the total carbohydrate intake, with exclusion of certain articles which are known to undergo fermentation readily. Such are potato, sweet potato, cabbage, beans (except string beans), and chestnuts. The harmfulness of potato in this connection is possibly explained by the work of Lang,⁵ who found in the course of experiments with pancreatic diastase that potato, though very easily changed to achroödextrin, is very slow to undergo the further change into sugar. In obstinate cases, particularly in the fermentative diarrhea of Schmidt, it may be necessary to resort for a while to a strict protein-fat diet, consisting of eggs, meat, fish, bouillon, butter, and tea and coffee with milk or cream. According to Schmidt a small amount of cane sugar and fruit jellies may be taken in addition to the above. After a few days of such a diet, carbohydrates may be added cautiously, one at a time; sugar, cream of wheat, toast or zwiebach, macaroni, and rice in the order named. Potato is best left out of the diet for a long time. In cases without diarrhea vegetables of low carbohydrate content, such as carrots, turnips, squash, egg-plant and string beans, are well tolerated from the first; they should be sieved and served with butter.

If obesity is present, a reduction in the total caloric value of the food should be combined with the limitation of carbohydrates. The relief of indigestion is often a welcome by-product of an obesity cure.

⁵ Lang, S., *Zeitschr. f. exp. Path. u. Therap.*, 1910, Bd. 8, cited in v. Fürth, *Probleme d. phys. u. path. Chemie*, Bd. 2, S. 216.

The results of the dietetic treatment of carbohydrate indigestion are most gratifying, dyspepsia of long standing often disappearing in a few days. In fact, if relief is *not* obtained, it is probable that the diagnosis is wrong and some other condition is present.

The drug treatment of fermentation will accomplish little by itself. When combined with regulation of the diet it sometimes seems to be of benefit, but as a rule it is superfluous. The drugs most likely to give relief are the various salicylate preparations and beta-naphthol. Belching can be facilitated by the administration of the ethereal oils, such as peppermint, or menthol in half-grain doses. Diastatic preparations are occasionally of service.

CASE REPORTS.

The following cases, all of which occurred in private practice, may serve to illustrate the foregoing statements.

1. M. M., female, single, age 67. First seen October 1, 1914. Past history not remarkable except for a tendency to nervous prostration. She has suffered from indigestion all her life, usually in attacks lasting two to six weeks. The chief symptom has been distension with gas, coming on two or three hours after eating, and causing a good deal of distress, sometimes enough to keep her awake at night. When very uncomfortable she resorts to enemata to remove the gas. The physical examination was negative except for gurgling on palpation over the intestines. The feces were neutral in reaction, and were negative microscopically except for an excessive number of yeast spores. The treatment consisted in a protein-fat diet, with a small amount of carbohydrate in the shape of sieved green peas and apple sauce. A powder containing B-naphthol, soda and bismuth was given after meals. The result was prompt relief; three weeks later she reported that there had been very little gas, though she had left off the medicine some time ago. Fruits once a day, nuts and ice cream were then added to the diet. At her next visit, November 6, she was feeling very well. She was told she could eat rice, and after December 3, all vegetables except potato. She reported by letter July 7, 1915. In the spring she had two short periods of indigestion, lasting only a day or two; since then she has been free from symptoms, except an occasional feeling of discomfort in the abdomen, relieved by a "coffee-mint" tablet.

2. Mrs. D. K., age 43, seen January 14, 1915. The past history was negative. For the past ten years she has had frequent pains in the left iliac region associated with distension. There is a constant dull pain there, with acute exacerbations in which the pain radiates upwards towards the left costal margin. Examination showed a moderately obese woman, weighing 160 pounds; the viscera were negative except that the sigmoid was palpable. The feces were slightly acid in reaction, and showed a few undigested starch granules. On a diet low in carbohydrates she experienced early relief from pain, and on February 3 reported that she had had pain only once in the last fortnight. During the following week she had no pain. On inquiry, June 26, 1915, she stated that she had been free from pain on a slightly restricted diet, except for a few occasions when she had taken more carbohydrate than usual.

3. Mrs. R., age 56 years. She has been getting stouter for two years, owing to lack of exercise following the death of her pet dog. (She used to take the dog out for a walk daily.) There has been a good deal of heart-burn and gas in the stomach. Under a simple anti-obesity diet these symptoms promptly disappeared.

4. This patient was a very fat cook who complained of incessant belching. The appetite was good but she was afraid to eat on account of the distress afterwards. Complete relief followed restriction of the carbohydrates and of the total food intake.

5. C. C., a college professor, age 48 years. He complained of distension from gas after meals, especially if he used his eyes directly after dinner. Examination showed slight obesity, and the abdomen slightly distended. The stool was slightly acid, and contained many gas bubbles and undigested starch granules. The treatment consisted of a mild reduction cure with low carbohydrates. A week later he reported that since changing his diet he had not been at all annoyed by indigestion. Carbohydrates were gradually added to the diet without a return of symptoms. On inquiry six months later he said he had remained well, though on an ordinary diet.

6. This case illustrates the so-called fermentative dyspepsia of A. Schmidt. Mr. S., age 53 years. He had been under treatment for the past few years for vague neurasthenic symptoms and for chronic prostatitis. He complained of diarrhea of three months duration. The stools were two or three a day in number, and were mushy, not watery. Examination showed a rather stout man, with nothing remarkable except the character of the stools; these were brown, soft, not formed, but full

of gas bubbles. Microscopic examination showed numerous undigested starch granules. He was put on a protein-fat diet consisting of eggs, meat and butter, with a small amount of carbohydrate in the shape of gluten-biscuit ("proto-puffs") and tomatoes. No drugs were prescribed. A week later he reported considerable improvement, the bowels moving only once or twice daily, and partly formed. He was told to add three slices of toast to his diet, and to take a teaspoonful of a diastatic ferment preparation after meals. During the following week the movements dropped to one a day, and became formed and of normal appearance. Carbohydrates were restored gradually to the diet list and no relapse took place.

DISCUSSION.

DR. L. M. GOMPERTZ (New Haven): Under normal conditions, ordinary carbohydrates (starches and sugars) are very perfectly utilized in the alimentary tract of man. This has been proven by Prof. Lafayette Mendel of Yale, through studies made in his laboratory.

When carbohydrate digestion is impaired, the symptoms appear as outlined in the excellent paper of Dr. Tileston. In cases of so-called "carbohydrate indigestion," with its resulting fermentation, sour taste, etc., an analysis of the gastric juice after test meals should be made, and a hyperacidity will almost always be found. Thus, experience teaches that an increased acidity is one of the main etiological factors in the improper utilization of the carbohydrates. Clinically, patients may complain of sour taste, heart-burn, gaseous eructations, etc., and the cause of these symptoms is the presence of organic acids, and not increased hydrochloric acid. The examination of the stomach contents in these cases is therefore important to determine the condition of gastric secretion.

An examination of the stool is also important, in an attempt to determine whether or not starch granules are present. In cases where protracted diarrhea exists, an examination of the stomach contents after a test breakfast will usually show an absence or decreased amount of hydrochloric acid. It is therefore obvious why these examinations should be made, as they have a direct bearing on the treatment of this condition.

If there be any tendency to impaired carbohydrate digestion, condiments, tobacco, etc., intensify the difficulty by increasing the flow of gastric juice, and should therefore be prohibited. I agree with Dr. Tileston that the treatment is mainly dietetic, carbohydrates being excluded from the diet as much as possible, although I believe that medicinal treatment is also of value. When hyperacidity exists, such drugs as sodium bicarbonate, calcium carbonate and magnesia may be used with benefit, and when there is a large amount of intestinal fermentation, ichthyol produces beneficial results.

SURGICAL PAPERS.

Prolapse of the Uterus in Elderly Women.

DANIEL SULLIVAN, M.D., NEW LONDON.

Mr. President and Gentlemen:

In the subject matter of my paper,—prolapse of the uterus in elderly women—I refer to the condition which we so commonly find in women over 60 years of age, where the uterus has prolapsed through the vulva and is hanging between the thighs, and with it, the inverted vagina, bladder and rectum. This is often referred to as *procidentia uteri* or as *pelvic hernia*.

I first became especially interested in this subject when an old lady of 65 years came to me and said that she had been a sufferer with “falling of the womb” for twenty years, and while her bladder trouble caused distress, recently it had become so unbearable that she was willing to do anything to get relief. She stated that during the first six or seven years, a ring-pessary had given relief, after that, as this pessary would not stay in place, she resorted to an abdominal belt with a stem pessary; this, after four or five years, failed to hold, and she had to be content with the support given by a napkin. Recently she had heard of a woman, some years younger than herself, who had been successfully operated upon for the relief of this condition, and she hoped that she might be helped in this way. She consulted her family physician and was told that such an operation consisted of the removal of the uterus and was a formidable one, even in the case of the young woman; but very dangerous and not advisable in a woman of her age. (I later performed a successful operation upon this patient.) I had heard this story before, and finally decided to ask physicians why such advice was so commonly given. I talked with twenty practitioners of medicine on this subject. One had resorted to surgery in one case and the patient died; since then he has never advised surgical measures. Two had had surgical experience, each with one case; but in a

short time after operation these cases were as bad as ever. Two physicians had had cases but had never considered surgical interference. Five said that they did not advise surgical measures because they found that old people would not consent to such. Six thought that surgery was all right in young women but too serious a matter for old people. They had never looked into the subject thoroughly, but took it for granted that it would be necessary to remove the uterus, and thought such a procedure too severe an ordeal for an old lady. Four had had cases subjected to surgery and were perfectly satisfied with the results.

From the above, it would seem that there are many practitioners who are not very enthusiastic when it comes to applying surgical measures for the relief of prolapsed uteri in elderly women.

From my experience, I am convinced that if a little time is given to the study of this subject, it will be found that surgery offers the only hope of relief from this distressing condition, and, if properly applied, will effect a complete cure in the great majority of cases.

A number of operations are recommended, each one being championed by some man of national reputation. Some of these advise a vaginal or abdominal hysterectomy with a rearranging of the suspending ligaments. Others omit the hysterectomy but make various changes in the ligaments.

While there is much discussion as to which of the numerous variations of the above principles should be applied, all are agreed that, to insure success, it is necessary to combine with any one of them, the building up of a good, firm pelvic floor.

I find that in the last twelve years, I have operated on twenty-three cases between the ages of 60 and 75 years, with no mortality. On three of these I did a perineorrhaphy and colporrhaphy, with a return of the trouble inside of three months, and a second operation was required. On four, I did a supervaginal hysterectomy and later was obliged to do a perineorrhaphy and colporrhaphy that almost closed the vagina. On two I did a Gilliam's operation and on one a Mayo's; here the uterus remained where placed, but the cystocele and rectocele returned,

requiring as a later operation a perineorrhaphy and colporrhaphy. On two I did a Goff's operation, that, as you know, required a vaginal hysterectomy, and, while the result was satisfactory, there was more post-operative distress than in some of the other cases. On eleven cases I did a Gilliam's suspension or internal Alexander, as it is called by some, with an anterior colporrhaphy and perineorrhaphy. The results in these cases were all that could be desired. The post-operative symptoms consisted of a soreness over the lower abdomen for a few days, and nothing more. While this is now the operation I prefer, I believe that there is no best operation, each man working out for himself the method that he can follow with the least effort, giving the least untoward after-symptoms and a good result.

From these twenty-three cases, I have found that an old lady bears the operation as well as the young, that she suffers a great deal less pain, or at least makes a good deal less fuss about it. I believe that age is no contraindication to the operation for the relief of prolapsus uteri.

DISCUSSION.

DR. SAMUEL M. GARLICK (Bridgeport): *Mr. President and gentlemen:* The paper presented by Dr. Sullivan calls our attention to a condition which is exceedingly distressing and demands a relief. Menstrual life and the reproductive functions cease with the climacteric. Just who shall say when a woman is old? It is a mistake to say that at the change of life all married women lose interest or abandon pleasures in the sexual relations; therefore conditions should be so adjusted that they may live in such enjoyment. Many women retain comeliness, alert minds and pride in personal appearance, joy in social conquests, long after the child-bearing period ceases. Such women demand and others are entitled to have relief from the tormenting and so terribly depressing conditions referred to in Dr. Sullivan's paper.

I long ago learned, as Dr. Sullivan said he learned, the remarkable tolerance of the fairly well-conditioned woman when well past her reproductive period for operative measures of considerable magnitude, provided, as I say, the time occupied in the operation be not too long and the enforced post-operative confinement be not necessarily too rigid or too prolonged. I have seen several such restored from a condition of

chronic invalidism to a state of self respect and years of serene health in old age.

My most satisfactory results have followed vaginal hysterectomy, anterior colporrhaphy, and a positive narrowing of the vagina. Of course no operative measures can restore atrophic changes, correct the altered blood supply or induce a new growth of pavement epithelium. Freedom may be secured from the often intolerable itching, when not diabetic, with relief from the discomfort of excoriated tissue; and a substitute for the absorbed fat and weakened muscles and ligaments may be obtained. By doing this the various untoward psychic phenomena which frequently follow the pathological menopause are averted.

DR. DANIEL F. SULLIVAN (Hartford): To me it is interesting and it may be to you to notice the evolution of the operations for prolapse of the uterus. I happened to get hold of a book written by Dr. Cook in London. It was published in 1676, and that's the earliest date that I can find where I could refer any of your students to the treatment of prolapse of the uterus, and even then Dr. Cook was doing operations, and he said in his notes, "Three days after the operation the patient did die but the death was due to indiscretion." Then in another note at the bottom of the page he refers to a treatment of the prolapse of the uterus given fifty or one hundred years before that. "Unknown to the patient tie a mouse to her thigh and the prolapse will disappear." Now as funny as that may appear, some of the present discussion in regard to prolapse, twenty-five years from now may be absurd.

Dr. Kelly has given a report of one thousand operations which he has done recently for prolapse and now he comes out with a recent paper where he has done sixty more. One Philadelphia man asks what has become of the thousand cases he has operated on? In all the operations done by Mayo the operation is not done excepting in the fourth stage of prolapse, not for the comfort of the patient but for the complications that come with it.

Therefore of all the operations advocated by some and disputed by others it seems to be the judgment that the operation is ideal. Now what is ideal is not natural. It may be academic and I think it remains for John B. Murphy of Chicago to devise a way for the prolapse of the uterus in elderly women, by a very simple operation entirely free from vaginal hysterectomy, which is not a simple one in either young or old. He makes a very small incision in the lower part of the abdomen, takes up the flexible uterine body and cuts off the lateral ligament and then cuts the uterus in two, dissects out the mucous membrane, and then places either side of the uterine body into the wall of the abdominal muscle, and there it is sewed and there it remains and the woman goes on her way happy with her uterus and rejoicing in her recovery.

DR. CHARLES E. TAFT (Hartford): If Dr. Sullivan will read again the recent articles on surgery and gynecology to which he refers he will find they treat of retroversion and not procidentia. The thousand operations were done for retroversion and not for procidentia. I think Dr. Sullivan, the author of the paper, is to be congratulated on having twenty-three cases without a death. Very few surgeons can say as much. I want to mention another operation which I have used with success in certain types of cases to which I have previously called your attention; that is procidentia in elderly women who are widows and with whom further sexual relations are not liable to occur. This operation that I refer to has been done for many years and was originally devised by Mrs. Fanny Berlin of Boston, who operated successfully on a number of cases. This operation consists of bringing the posterior and anterior walls together in front of the uterus and is combined with a high perineorrhaphy. I have done this operation a number of times, so far successfully. The patients all lived. The recovery has been absolute and there has been no relapse that I have knowledge of. Of course this operation has very positive limitations, but in such ideal cases as I have noted where you have the consent of the patient, understanding what it means, there is no operation so easy to perform or is so positive in its good and lasting results.

As regards other operative procedures in elderly women where for marital reasons the vaginal canal must be preserved, I think we have all had the same experience as Dr. Sullivan, that the majority of such operations were successful. We have tried first one operation and then we have tried another, endeavoring to find the ideal procedure. Some of them we have been perfectly satisfied with; others we have had to re-operate for one reason or another. My personal impression is that it is desirable for various reasons to save the uterus in every possible case and I believe that will practically include every case. In all cases I try to save the cervix, because in rebuilding the upper pelvic floor it makes a good hitching post to attach your ligaments to. You can fasten it to the abdominal wall if necessary, making a firm support there, and you are not as apt I think to get the bad results and recurring procidentia that you do where you remove the uterus completely. Complete removal of the uterus to-day, if properly done, means separating the bladder from the uterus or pushing it up out of the way, bringing your broad ligaments together laterally, as one of our eminent operators does, or passing the ligaments in front of each other, overlapping them and fastening the bladder to the posterior portion of the ligaments. It is a very formidable operation and is not a simple one. It is possible that it may be done easily in certain cases by some operators. The originator of this operation did two here in Hartford. I carefully timed him and it took him two hours in one case and a slightly shorter time in the other. One of the patients died. That is not an easy operation.

There are some that are easier and attended with much less risk to the patient.

Dr. Murphy's operation I have never done. On general principles it has appealed to me as a reasonable proposition. I am not sure whether I would do it or not. I have been able to get satisfactory results by pushing the bladder up above the uterus and bringing the lateral ligaments together in front of the uterus, making a sort of sling in which the cervix can swing. A high perineorrhaphy combined in some cases with some form of shortening of the round ligaments completes the operation. I believe in some cases it is also wise to shorten the sacro-uterine ligaments in order to hang the cervix as far back as possible so as to increase the intra-abdominal pressure on the posterior surface of the uterus. I am strongly opposed to the use of pessaries in these cases, particularly the so-called cup and stem pessary which is now generally used by practitioners, as I have seen very unfortunate results from its use in the way of deep ulcerations which may be a possible cause of carcinoma.

DR. P. H. INGALLS (Hartford): I am sorry I was not here when my name was called but I was unavoidably detained. I had not the pleasure of hearing Dr. Sullivan's paper but he sent me a copy of it and I went over the material. I think the conclusions at which Dr. Sullivan arrived are the conclusions at which all others must arrive, that there is some practical operation for relief of elderly people. For a great number of years we were rather timid about operating on these elderly women, but the symptoms were so distressing and the use of pessaries was so uncomfortable we had to do something for relief of the distress. I believe the patients suffer more from prolapsed bladder than from the prolapsed uterus. In these operations as much care must be taken to take care of the bladder that is down as to take care of the prolapse. The great objection to the operation as done by so many is that hysterectomy has not relieved the trouble. For my part I have never seen that any good results came from doing the hysterectomy in these cases. It is a perfectly simple thing to do but at the same time you haven't accomplished anything when you get the uterus out. You haven't relieved the symptoms from which the patient suffers. Neither do I think that any operation which does not fasten the uterus up in a good position is a good operation. You cannot accomplish it all by plastic work from below.

I have tried the various operations and I feel we must go ahead and do the operation for each individual case which seems to us the one to relieve the woman of her symptoms. The simple doing of ventral fixation will not always work.

I have had some unfortunate experiences in the past in doing it. I have seen the uterus stretch out as long as the ligaments, and let the uterus come down.

The senile atrophy which the uterus undergoes after change of life does not give good tissues to hold up and it will not hold up an adjacent part by hitching it to the abdominal wall.

I find in the first place it is the best thing to dissect the bladder from the fundus of the uterus and put it back up above the fundus and fasten it up there and then take out two V-shaped pieces from the anterior vaginal wall, shorten up the vaginal wall in a way that will not foreshorten the length of the vagina but shorten it from side to side. And then do a good strong perineorrhaphy; and I try to get as much of the old ligaments or muscles that have been separated as I can and bring them together and then close the perineum over them. That gives a good vaginal floor and gets the bladder up out of the way. Then you have to do the work in the abdomen and I have found in a majority of cases that by a combined operation of shortening the ligaments and doing a ventral fixation that these cases will hold better than by any other combination of operations that it has been my experience to try.

I haven't let age for the last number of years interfere at all with my work. I find these old people, although the operation is long (you can't get out of that operation in much less than an hour and a quarter to an hour and a half), by etherizing carefully, stand it very well. I have had no unfortunate results from the operation. Of course in some old people the tissues are so bad you can't find any levator muscles to cross and you can't find any ligaments that are good, and those are apt to bother afterwards. If you can get some good levator muscles and a good round ligament to fasten, and get the bladder disposed of, which by the way is the most important part of the operation, you will give these women a relief that cannot be accomplished by any pessary or artificial means.

DR. J. J. BOUCHER (Hartford): There can be quite a degree of the prolapse of the uterus without causing any great symptoms to the patient. The degree of prolapse must determine the kind of operation. Of course it goes without saying that in all forms of prolapse the perineal floor must be built up. Again we are dealing with the fact of women of advanced age whose tissues are flabby, which will stretch out, so in repairing the perineum in prolapse to a marked degree giving a considerable sized cystocele there are two or three operations which can be employed. We have tried every sort of operation. We have had failures in everything, but probably the best operation is the operation advised by Cook which he calls the excised

hystero-perineorrhaphy, which is on the same order as the Murphy operation. This operation gives probably as good results as any operation that can be done. This operation is not advisable in cases of a marked degree of prolapse. An operation that is advised is the operation that is now done. The vaginal hysterectomy which is now done means removing the uterus, and I say that should not be done. We must recognize that of all operations for prolapse in elderly women the one operation which gives the best result is the one that will establish the most substantial pelvic floor.

Now as Mayo does the operation, and he is doing it different to-day than he did ten years ago, he simply cuts right around the cervix down to the vaginal mucosa, entirely circling the cervix, pushing the vagina up, supporting it from the bladder. He then inverts the uterus, and with retractors pushes the bladder up from the cervix and pulls the uterus up. He takes two clamps, places one on each side of the broad ligaments and cuts them off. Then he takes two more clamps, placing one on the remaining portion of the tissue and cuts that off. It is a matter of fifteen or twenty minutes at the most. The whole operation ought not to take over thirty-five minutes without hurry. It is bloodless. When he knits the broad ligaments he does not approximate them as he used to; he brings them up in such a fashion that one side lies across the other, and sews the ligament across, beginning with the lower surface of the vaginal wall, and carrying it up to a point where it reaches the round ligaments. The point of the operation which is important and which he overcomes, and which he says he can overcome every time, is the relief of the cystocele. He grasps the round ligaments on either side, and sews them together on the upper end of the broad ligament and at the same time takes a stitch through the vaginal tissues to the mucous membrane and ties them in. He has got the broad ligament in there for the floor, the bladder is up there and it can't come down. Then he crosses over to the mucous membrane with sutures, not bringing them through the mucous surfaces, so when the operation is completed there are no stitches in sight.

Most of these women can be operated upon, but still there are a class of women of advanced years with bad kidneys and bad arteries and bad hearts. As it is a pretty formidable operation I would hesitate to say that all elderly women should be operated on. I think there are a certain class of cases where some sort of device can be used for comfort and safety. Take a large pad of lamb's wool and soak it in vaseline or sweet oil, place that in the vagina and hold it up with a T-binder which the patient herself can change every day. It is perfectly comfortable and it will hold the cystocele up.

As I said in the beginning and as Dr. Ingalls emphasized, the condition that gives the trouble for which the patient comes to us is not the

prolapse but it is the cystocele. I saw one case, a woman got frightened with the uterus clear outside the vaginal orifice. She went through a normal pregnancy and was delivered of a living child which is living to-day.

There is no routine operation. It is a condition where one must work on the condition present and do the best thing that is to be done under the circumstances. It does not matter who they are or who does it, there will be relapses. Probably these two or three operations in those cases will give the best results. I personally haven't much confidence in supporting the uterus inside the abdomen with ligaments that stretch. If we can hold the uterus up by some means and give a fairly decent pelvic floor we can stand a better chance for getting good results than we can with any form of inner abdominal ligaments.

DR. FRANK W. STEVENS (Bridgeport): In my experience, most of these operations have been a failure. The combined operation is tedious and requires a change of operating field. It is really two operations.

I now do Bandler's operation, which is a modification of Dührssen's of Berlin. Through a longitudinal incision in the anterior vaginal wall I separate the anterior vaginal wall from the cervix up to the bladder by gauze dissection. The bladder is peeled off from its attachments by gauze dissection until it is perfectly free and can be pushed up into the abdomen out of the way. The vesico-uterine peritoneum is incised transversely and the pelvis explored. The fundus is then brought through the incision and four long sutures, two of chromic gut and two of linen, are passed through the fundus and left long for future use. The fundus is now pushed back in the pelvis and a high amputation of the cervix with the formation of a new external os is done. The uterus is now pulled forward under the bladder and fixed to the narrowed anterior vaginal wall by the four fixation sutures previously placed. I next do a perineorrhaphy after a thorough separation of the rectocele from the posterior vaginal wall by gauze dissection up to within one-half to three-quarters of an inch of the newly-formed external os.

The perineorrhaphy is done by drawing the levator ani muscles together by mattress sutures of chromic gut. The posterior vaginal wall is formed by three chromic gut sutures and the whole is held together by a figure of eight suture of chromic gut.

This gives a splendid, firm perineum holding back the rectocele while the cystocele is prevented by the small uterus fixed to the narrowed anterior vaginal wall. It can be done in less than an hour, the abdomen is not opened and the operation is much simpler than it sounds.

Bandler's book "Vaginal Celiotomy," W. B. Saunders and Company, gives the operation most clearly and the plates are beautiful.

So far this is the only operation I have ever done that has been perfectly satisfactory.

DR. DANIEL SULLIVAN (New London): The meeting to-day is very similar to all meetings throughout the country when a question of prolapse of the womb comes up. If you will read the proceedings of the New York or Chicago or Philadelphia Gynecological societies, or read the symposiums from our different magazines you will find the same disputes. Every man has his operation and every man says that his operation is a success and all the rest are failures. They will all get up and tell you so and tell you why. That's why I say there is no one best operation. Each man finds for himself the one operation which he can perform, perform the most quickly and safely and get the best results. That man will stick to that operation. Now the perineorrhaphy or the anterior colporrhaphy with the Gillam suspension of the round ligaments is the one I have found most satisfactory. I find that a nurse can start the anesthetic and after I have done the perineorrhaphy and the colporrhaphy I can change my gown and she can stop the anesthetic and I can do the other before the patient comes out of the anesthetic.

In Gillam's operation which is good, I would get the round ligaments and unite them. It is a very quick and simple operation. In my hands I find that I can do that the quickest and get the best results. I know other men who get better results in other ways.

I agree with Dr. Taft that Dr. Sullivan made a mistake when he spoke of a thousand cases of prolapse of the uterus done by Dr. Kelly. I think Dr. Kelly said he operated on a thousand cases of retroversion of the uterus. And in that symposium there was a good deal of discussion as to what was the best operation. I think Dr. Kelly said there were fifty-seven operations. I did one Murphy operation, I called it the Mayo operation because I first saw it done by the Mayo's bringing the uterus in and splitting it and taking out the mucous membrane and bringing each half under the fascia of the recti muscles. That is, to my way of thinking, a good operation but you have got to do it with a perineorrhaphy, you have got to combine it with building up a pelvic floor in order to make it successful. In my hands I found it that way and I can't do it as rapidly as I can the internal Alexander. As Dr. Ingalls said, the cystocele is the great trouble. I have suspended the uterus, and I have returned the cystocele because in pulling up the uterus it smoothes that out, but anywhere in from four weeks to six months it will return again and it will do it in a young woman just as well as an old woman. You don't like to do the second operation, and you don't like to have your patient come around and find fault especially if she paid you a good fee for the first one. You like to have it a success and do it at one time. My idea is to build up the pelvic floor and repair the cystocele, when you do the rearranging of the ligaments.

The operation spoken of by Dr. Boucher I have known as the Goff operation where you do a vaginal hysterectomy and bring the broad ligaments together and put the bladder up over the broad ligament and stitch it in place. I have done that, but in my hands the after results were bad, the after symptoms were very bad. My patient suffered a good deal of pain. Old ladies don't stand pain well. They don't stand shock well, so I have not adopted that method.

The hysterectomy: there are a great many operations that call for a hysterectomy, vaginal or abdominal, and you will find a great many advocates of the hysterectomy. The uterus in an old lady usually is atrophied, is very small, and after you take that out you have got to do a perineorrhaphy, you have got to repair the vaginal floor; so why subject her to the shock and the trouble of hysterectomy when you can easily suspend? But there are some operators probably like Dr. Kelly who can do a hysterectomy as rapidly and with as little effort as an ordinary man can do a suspension, but we are not all Dr. Kellys, so take the direction of least resistance and get the best results.

Now the womb is coming down a good many times without bringing the bladder and the rectum, it is true, and we have no physical symptoms. The patient doesn't complain of it much but they are conscious of the fact all the time that a mass is out between their thighs, and furthermore, if they don't worry about it the whole family worries lest some day there is going to be a cancer there; and it is always a source of annoyance. It is always on the patient's mind and the sooner you can relieve it the better. I don't advocate operating on all old ladies. I wouldn't advocate operating on an old lady in the last stages of tuberculosis of the lung, nor one with arterial sclerosis. You must pick the cases and see where you are going to gain something. There is no use in operating to relieve one cause when you can't relieve a trouble that is a good deal worse.

Bone Graft in Pott's Disease.

JAMES L. MORIARTY, M.D., WATERBURY.

Pott's disease or tuberculosis of the spine is the most common form of tuberculosis met with in bones or joints. The body of the vertebra is the part generally involved. No method has been given us by which we can attack the disease successfully, in situ, surrounded as it is by so many vital organs. This is why we have been dependent upon appliances of one sort or another. If the disease occurs in the upper part of the spine, the appliance or brace must be of a different kind than when it is found in the middle or lower part of the spine. This fact has made possible the suggestion of so many ingenious forms of apparatus, from the Bradford frame to the complicated Calot jacket. If one were to look up the number of these braces and the results obtained by their use, he would be disappointed. The point to be gained in treating Pott's disease is fixation of the vertebræ involved. It is generally conceded that this does not take place in cases treated by plaster jackets. It has been known for some time that individuals have recovered from Pott's disease and died from other causes. Specimens of such spines are to be seen at the Warren Museum of Boston. A firm ankylosis has taken place between the spines of the affected vertebræ and immobilization produced: and so it was deduced that the cure was brought about by the firm fastening together of the spines of those vertebræ involved. Nature no doubt attempts this same action in all cases of tuberculosis of the spine.

But there are so many impediments in the way of a continuance of this natural process that we must step in and help Nature, thereby effecting a cure. The splendid work of Ely on tuberculosis of bones and joints accentuates this point. Many able men have attempted to cure Pott's disease by fastening the spines of the diseased vertebræ together. In 1891, B. E. Hadra advocated wiring the spinous processes together. This method seems

to have been abandoned. Along in 1910, Lange used steel plates, applied beneath the muscles, one either side of the diseased vertebræ and close to the spinous processes. These did not afford sufficient fixation, and frequently gave rise to irritation and had to be removed. More recent attempts have been made to fix the diseased vertebræ by an autogenous bone transplant and Albee's operation is based on this idea. The writer has employed this method of Albee in eight (8) cases of Pott's disease with, he believes, absolute cures to date. One of the first three cases sloughed slightly due to excessive pressure over the skin flap, produced by the bandage. Yet all were out of bed in six weeks. The bone graft seems to have some inhibitory action against infection. These cases were seen by me a few days ago and all were the picture of health, playing about like other healthy children. These first cases were operated three years ago and have grown taller since the operation and the spines show little if any deformity. In one child the 5th and 6th cervical vertebræ were involved with an abscess. The abscess was not interfered with and it disappeared. The oldest of these children was four years old, the other two were each three years old. One case had the lower cervical portion of the spine involved, in the other two the disease appeared in the mid-dorsal spine. When both these latter cases were operated, it was interesting to see the movements produced by respiration in these spines at the diseased area. One could very readily note how difficult it would be, or rather impossible, for a jacket to immobilize those spines. On the other hand, when the bone graft was inlaid the movements ceased at once and the change was really* dramatic. Of the other five (5) cases operated, the youngest was three (3) years of age and the oldest eighteen (18) years. The upper dorsal region was involved in three (3) and the upper lumbar in two (2) of the cases. All of the cases were out of bed in six or eight weeks and the oldest case, eighteen (18) years, was out at his work in six months.

The technique used in these cases was the following. The patient while being made ready for operation is put upon a Bradford frame for perhaps three or four days beforehand.

This is time well spent, because the little patient becomes accustomed to the position, and you are better able to reduce the gibbosity at the time of operating. The patient is given a laxative the day before the operation. The night before the patient is given a bath without scrubbing, and a sterile pad is bound upon the back; the leg from which the bone graft is to be taken is bandaged with a sterile bandage. On the morning of the operation the leg and back are prepared alike. With the patient in the ventral position the leg and back are prepared with benzine and iodine and the leg bandaged with a sterile bandage. A sterile sheet covers everything; the latter has an opening through which you can reach the area involved. The incision in the first case was made longitudinally over the spines. We got some sloughing here and thought at first that it might extend through to the bone graft but happily such was not the case. Later, the curved incision was used; the idea was that if we got infection here in this incision it would be so far away from the bone graft that the opportunity for infection would be diminished. The spinous processes are reached by a curved incision starting at least one vertebra above the diseased area, going to one side, describing a half circle and ending at least one vertebra below the diseased area. This skin flap should not include the *ligamentum nuchæ*. Then the cartilaginous covering of the tips of the spinous processes are cut longitudinally through the center with the scalpel. The interspinous ligaments are split into equal parts to a depth of one-half to three-quarters of an inch. In a young child it is not necessary to split the spines or interspinous ligaments to as great a depth as in an older person. With a chisel and mallet each process is split longitudinally into equal parts for a depth of perhaps half an inch; taking care that all the processes are broken toward the same side, producing a green stick fracture in each. We now have a wedge-shaped cavity or groove made by the separated tips of each spinous process and the separated interspinous ligaments; into this groove the bone graft is inserted. None of the ligaments or muscular attachments of the processes should be cut because by their support the graft is held in place. A hot saline pack is now placed over

the wound and the bone graft prepared. The position of the patient is not changed except that the prepared leg is flexed on the thigh. An incision is made down upon the anterior-internal surface of the tibia. The length of the graft should extend one vertebra above the diseased area and one vertebra below. The breadth should be from three-quarters of an inch to an inch and its thickness about one-half inch. The size of the graft will depend on the size of the patient. All the diseased vertebræ and one healthy one above and below are spanned by this bridge of bone. The graft is cut so that it takes the shape somewhat of a V; the sharp edge is placed anterior. The graft is now placed between the halves of the interspinous ligament and the spinous processes. It is held in position by interrupted sutures of medium kangaroo tendon. The sutures are passed through the supra spinous ligament on one side over the graft posteriorly and then through the supra-spinous ligament of the opposite side. A suture is placed on either side of each spinous process to hold the graft firmly in place. By drawing the sutures tight the gibbosity frequently disappears. In one of the cases the gibbosity was present for so long a time that the graft had to be shaped. It was cut so that its angle would fit the angle of the gibbosity. The graft, however, is always straighter than the gibbosity so that when both are drawn together the spine is straightened. Here is where the electric motor saw is useful. The saw was used on all cases except the first. For quick and efficient work it is quite necessary. Much time can be saved and the transplant is more easily formed than with the mallet and chisel. It can be made sterile by boiling and in no way complicates the operation; the latter is completed by suturing the skin with chromicized catgut, putting on sterile pads and keeping the patient on a Bradford frame for six or eight weeks. One of the great advantages of this operation is the fact that your patient is up and about in the sunlight within eight weeks. Everybody recognizes what that means to a tubercular case. Calot has made the study of sunlight and fresh air a science in tubercular bone and joint diseases. His cases eat and sleep on the sands of Berck-sur-Mer in France. Bone transplanting is now recognized as a

successful surgical procedure. Just what part the periosteum plays in the transplanting of bone is a question. Fraser of Edinburgh holds that the periosteum has active bone-forming properties. Macewen says that the bone is reproduced from the proliferation of the osteoblasts in the bone graft; this regeneration depending not at all upon the periosteum, the latter simply preventing the escape of the osteoblasts into the surrounding tissues. In other words, the periosteum acts as a limiting membrane only. Murphy says that the graft is not osteogenetic but simply osteoconductive. He considers it unnecessary to have a transplant with the periosteum attached to it; and yet he leaves it on the transplant because he is not convinced that it does not play a rôle. Axhausen and Lexer teach that the bone in the graft dies, is absorbed and is reformed from the periosteum. This is the general opinion held in Germany two years ago.

The late lamented Codivilla emphasized the fact that periosteum and underlying bone should make up the graft. McWilliams does not agree with Murphy or Macewen; he claims that the graft will live practically every time if it has periosteum and asepsis is attained. He found that in twenty-five cases where the periosteum was not retained on the grafts only 48% lived. In studying by radiograph some of those cases operated upon, the graft seemed to remain and unite to the spinous processes. A bone graft will live, according to M. S. Henderson, if the following conditions are fulfilled: The employment of strict asepsis; if the graft is taken from the same person; if the graft is given a good blood supply; if good bony contact is given the graft. Bone transplantation is now recognized as a successful surgical procedure when the periosteum is retained. Just what part the periosteum plays in the bone graft is a question. Whether the osteoblast is generated from the bone or periosteum or both is a question. However, in these few cases reported the method and results were satisfactory.

REFERENCES

- Ely: Joint Tuberculosis, 1911. Jour. Am. Med. Ass., Aug. 26, 1911.
Jour. Am. Med. Ass., Feb. 24, 1911.

Ely: Jour. Am. Med. Ass., Aug. 17, 1911.

Diseases of Bones and Joints.

Hadra, B. E., Trans., Am. Orth. Ass., 1891, p. 200.

Lange, Jour. Am. Orth. Ass., Nov., 1910.

Albee, Jour. Am. Med. Ass., Sept. 9, 1911, p. 885.

Post Graduate, New York, 1912.

Calot, Indispensable Orthopædics, 1915.

Fraser, Tuberculosis of Bones and Joints in Children, 1914.

Macewen, The Growth of Bone, 1912.

Murphy, Surg. Clinics, Dec., 1913, p. 997.

Axhausen and Lexer, Personal interview.

Codivilla, Revista de la Sociadæ Med. de Argentina, 1910, p. 626.

McWilliams, Annals of Surgery, April, 1914, p. 466.

Henderson, M. S., Mayo Clinic.

DISCUSSION.

DR. J. C. WILSON (Hartford): I am very glad of the opportunity to discuss this excellent paper of Dr. Moriarty's on bone graft for tuberculosis of the spine.

Mechanically the operation is perfect, as it furnishes a stay to hold the spinous processes, and in this way carries the body weight, as on a lever, and prevents the compression of the vertebra. It also prevents the rotation which it was practically impossible to control by means of a plaster cast or other mechanical appliances, and inasmuch as tuberculosis is primarily a low-grade inflammatory process, in which repair starts nearly as soon as destruction, and rest is the most efficient method of increasing the repair and diminishing destruction, this method seems to fill the requirements better than any other procedure could.

In my own series of seventeen cases I have seen two cases of paraplegia, which were well marked, recover after the operation so that they could move their legs at the end of from one to two weeks, and could walk the length of the bed by holding on to it to steady themselves at the end of the fifth week, with a very satisfactory recovery since that time.

Two other cases which had sinuses have closed and there has been no further trouble.

One other case we struck pus when we split the first dorsal vertebra and about 2 c.c. was evacuated. This was cleaned out with a dry sponge, the wound closed and no further trouble was experienced.

Other cases we operated upon on account of their weakness as shown by their disability in getting about and playing with other children, and within six to eight weeks from the time of operation they were playing as strenuously as any other child.

A recent case was one in which the deformity had been steadily increasing until the boy could no longer sit down in a chair, and instead of sitting would hold himself on his knees. This was because the lower ribs and the crest of the ilium came in contact with considerable pressure. The usual Albee operation was performed, the boy was up at the end of the fourth week and since then has had no trouble whatsoever in sitting in an ordinary chair. His general condition is very much improved.

My oldest case was fifteen years, and youngest two years.

With all regions of spine affected except the cervical, after seeing how firmly the bone graft heals to the spinous processes, it is difficult for me to believe that the graft is entirely absorbed and new bone formed. The periosteum in these cases is always saved if it can be done conveniently, but we do not consider it a serious accident if the periosteum should become detached.

We have found in this operation a method to relieve a condition which has been extremely distressing both to the patient and to the surgeon, and it seems to me as reliable as any operation can be.

Nearly all of my cases have sat up at the end of the fourth week, have been out of bed a day or two later. I have seen no shock from the operation and no counter indications except those that would apply to any major operation.

DR. WILLIAM F. VERDI (New Haven): *Mr. President and gentlemen:* I am very glad to have heard Dr. Moriarty's paper and Dr. Wilson's discussion. I am very sorry to say that I haven't had much experience with this kind of bone graft. The only thing that I can speak about is about the graft, and from my experience I feel that the plant which you take from the tibia or elsewhere does not grow as a graft as the word implies.

About two years ago I operated upon a child who had a bone cyst of the humerus. The cyst involved the upper portion, about a third of the humerus. I did a subperiosteal dissection of that upper portion of the humerus and transplanted a piece of bone a little over six inches long from the tibia. I had occasion to watch that case very carefully with X-ray plates. I could see from month to month how new bone grew out from the periosteum which was left and gradually absorbed of the transplant. In fact, the transplant stuck out a little above the shoulder so that it was quite sharp. In the course of six months that whole corner which stuck out was entirely absorbed and at present I don't think that there is any of the transplant left. I think what you do find is this, that the transplant acts as a conductor, or a scaffold, and the osteoblasts travel along it as one finds in any ordinary fracture. If the bone is separated from its periosteum it will not grow but if there is periosteum connected to the piece in that location that piece will live and stay there and perhaps

form more bone. But if you transplant a piece of periosteum from the tibia to the spine, while I haven't any experience to confirm it excepting this one case, I feel that it does not grow. Take for instance the Wolff skin flap. There is skin, a structure which is more apt to live, I think, than bone, and yet I have never seen a Wolff's transplant take. For example, a piece of skin taken from the thigh and put on the chest will die. But if you take a flap of skin with a pedicle and transplant it, it will grow; but if you leave it with the epithelium only, such as in Réverdin grafting, it does not grow. But take a piece of bone and separate it from its original blood supply and nerve supply and it is very doubtful, I think, if a bone like that can live.

DR. J. B. BOUCHER (Hartford): I want to have one word, complimenting Dr. Moriarty on his beautiful results. I think the operation has come to stay. There is one thing I want to add in regard to the use of the periosteum in which I agree with Dr. Verdi. I had a case which I presented to the city society here within the past two years which I think demonstrates that. A young girl twelve years old had tuberculosis of the clavicle. I removed the entire clavicle, disarticulating it at the sternum and scapula. I presented that girl at the society and presented the clavicle. Some three months afterwards I noticed a new clavicle developing and six months afterwards I found she had grown a new clavicle with just as perfect an arm as she had before the clavicle was removed. I think that demonstrates that periosteum is a necessity for the growth of new bones.

DR. JOHN C. PIERSON (Hartford): I heard a man during that graft operation speak of a change in correcting the deformity. My opinion is they don't correct any deformity, they hold it where it is. The appearance of the change in deformity is this, that when you are splitting your vertebra you lay them out a bit, and of course that does change the appearance in the removal of the deformity. At the same time I believe the vertebra remain exactly the same until you get to the fixation of the vertebra with the transplant and then it holds it so perfectly that it gives a chance for the vertebra to get well and I don't believe there is any chance for correction in the vertebra at all.

DR. JAMES L. MORIARTY (Waterbury): I wish to thank you, gentlemen, for the discussion. This is rather a live topic in bone surgery and it seems good to have so many disagree with you because it puts one on the *qui vive* to find who is right.

Dr. Wilson spoke of the readiness with which sinuses and paraplegia are cleared up after this operation. It is really wonderful to see how quickly a change takes place.

It is a question, of course, whether the paraplegia is due to the production of pressure or to a toxemic condition; yet what is more important to know is that this condition clears up after this method. Sinuses clear up with little or no attention; you all know the many methods that are in vogue at present for treating sinuses.

Calot will report wonderful results to us. Menarde, his colleague, helps him out.

Just over the border in Germany, other well-known men give their opposite opinions; and so you wonder which one is right.

Dr. Wilson criticizes the electric saw, perhaps legitimately; and yet if one gets in the habit of using an easy way out of a thing he will continue it. The first case we operated with chisel and mallet. The other cases with the electric saw. With the latter much time is saved and the patient goes through little or no shock.

Dr. Verdi believes that the bone graft is absorbed. Well, I can't say that it isn't, but I honestly believe so. In the cystic case mentioned, the graft may or may not have been absorbed.

Dr. Verdi will recall a case at Waterbury a short time ago of a cyst of the head of the femur. A graft was planted in the cystic head of the femur. The boy walked rather early on the leg and fractured it about the middle of the graft. We put the leg up in extension and got splendid union.

Now we radiographed that case frequently and from the plates I would say that that graft was not absorbed.

This with other cases I have seen make me believe that the graft remains. That is all.

Malposition of the Cecum Complicated by Appendicitis, with Report of Three Cases.

ALFRED M. ROWLEY, M.D., HARTFORD.

The diagnosis of congenital malformations on the body exterior, due either to nonfusion of the ectodermal layers, or to the abnormal placement of other embryonic cells, is comparatively easy and often encountered; but when embryological abnormalities occur in the cavities, masked by the body wall, the diagnosis is difficult, because of the relative infrequency in which they are encountered, and secondly because the symptoms are generally atypical of any one condition. But it behooves the internist and surgeon to bear in mind the possibility of congenital defects, either from nonfusion, misplaced cells, or from arrested fetal development, that may be present in the abdominal cavity, and to be conversant with the more common types.

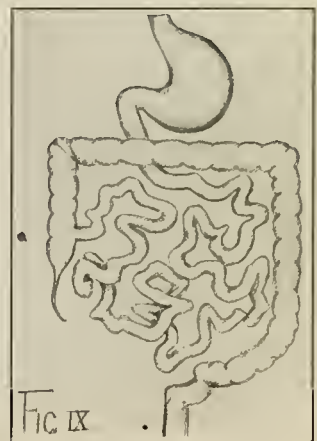
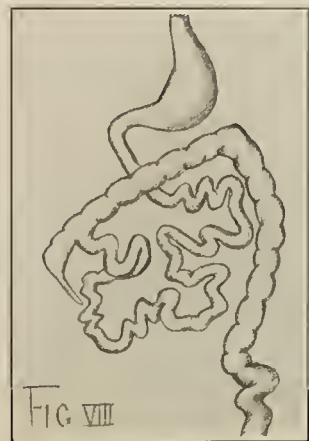
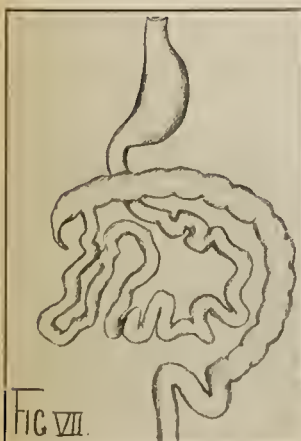
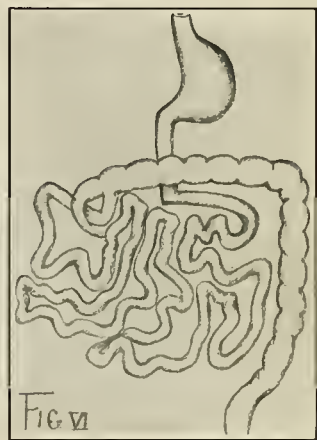
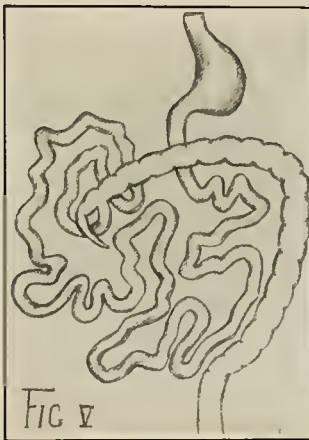
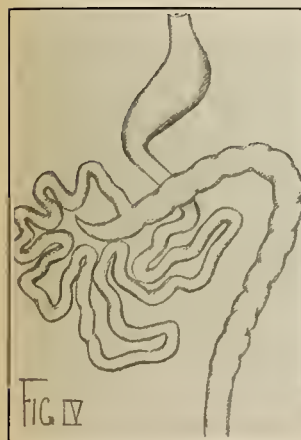
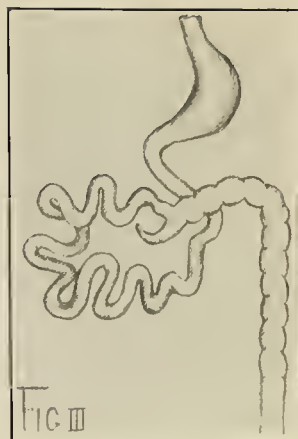
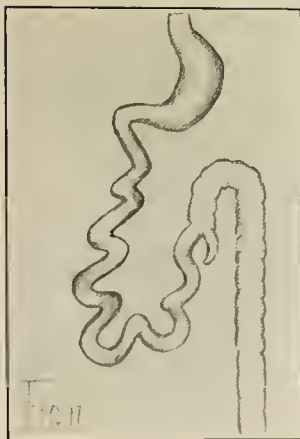
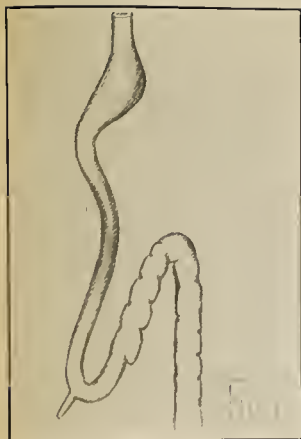
Medical literature is quite ripe in the number of articles which have been written upon prolapsus of the colon, so-called coloptosis, either describing it as an entity or associating it with that more common condition of splanchnoptosis, but there has been but little written upon the opposite interesting condition of non-descensus of the caput coli, or undescended cecum.

In coloptosis there is an over or vicious congenital development, with lengthened mesenteric attachments, of, in the majority of cases, all the suspended abdominal viscera, whereas in the condition to which I wish to confine myself, that of non-descent of the cecum, it would appear to be caused by too early fusion of the cecum with the parietal peritoneum, which may not only prevent the descent, thereby holding it in a high sub-hepatic position, but often prevents its natural rotation and causes the veriform appendix to lie to the outer or retro cecal position.

The following description of the embryological development of the colon, together with the schematic drawings, is for the most

part taken from George S. Huntington's "Work Upon the Anatomy of the Human Peritoneum and Abdominal Cavity."

Very soon in the development of the human embryo, after the body cavities have closed, the embryo straightens out and the alimentary canal appears as nearly a straight cylindrical tube, extending from the cephalic to the caudal end. Up to five millimeters, cervico-coccygeal measurement, the intestinal tube follows the body curve without deviation. Subsequently, the elongation of the intestine causes a small bend with the convexity directed ventrad, to appear in the umbilical region. This bend gradually increases until the gut forms a single long loop with an ascending and descending limb, beginning a short distance below the pylorus and directed ventro-caudal. Between the fifth and sixth week a cecal bud presents on the ascending branch of this loop and this is the beginning of the large intestine. The bud grows unequally, the terminal development lagging and is converted into the veriform appendix, while the approximal forms the cecum proper. The increase in the length of the loop, which is not uniform, begins at the seventh week. The descending branch, which produces the small intestine, increases much more rapidly than the ascending. That portion of the large intestine developed from the ascending limb, namely the cecum, ascending and transverse colon, moves in the third month to the middle line, coming in contact with the ventral abdominal wall. From here it moves upward to the cephalic end of the abdominal cavity. At the fourth month, the cecum turns to the right, coming in contact with the under surface of the liver, and subsequently reaches the vental surface of the right kidney. The period at which the cecum descends to its normal position in the right iliac fossa is variable. Treves, in an examination of one hundred bodies, found it undescended in two adults and lying in its subhepatic embryonic position. The primary cause of rotation of the cecum is the rapid increase in the length of the small intestine, which pushes the cecum upward, and the small intestine, passing from the right and retro-cecal position and sagging to the left, completes the rotation and places the cecum in contact with the dorsal parietal peritoneum. In the subsequent stages the





rotated cecum descends into the iliac fossa, thus forming the ascending colon. This is occasioned either by an actual descent or by the abdominal wall drawing away from the cecum, together with a lessening in the size of the fetal liver.

A high position of the cecum, even if non-rotated, would not necessarily make for trouble. It would cause the small bowel to propel its content up to a higher plane than normal, but it is likely that it is perfectly able to do this and keep its good motility, and it must be assumed that there are many individuals carrying the cecum in an abnormally high position, without any digestive symptoms referable thereto. But when this position is complicated with a pathological appendix, and especially when the appendical lesion is a suppurative one, and possibly in a retro-cecal position, the condition becomes a grave one, not easily handled, and seldom diagnosed before operation. The following cases I report to illustrate the various points I wish to bring forth.

Case I.—C. L.; residence, Torrington, Conn.; age, 30; male; entered the Hartford Hospital October 18th, 1914, and was discharged November 15th, 1914. His complaint was pain in the right abdomen. Family history was negative. Habits were good. He had what he described as nervous diarrhœa, which was likely to come on when he attempted to do any unusual thing. Four years ago he had an attack of dyspepsia. Appetite had been good and the bowels had moved freely. His present illness dated back four days, when he began to have distress in his stomach and some diarrhœa. He kept at work, however, until thirty hours before admission, when he had a sharp, sudden pain in the right abdomen, not accompanied by vomiting. He was transported to the hospital, thirty miles, in a motor car without a great deal of discomfort. Physical examination showed a well-developed man, heart and lungs negative, tongue coated, foul breath. His abdominal muscles were somewhat rigid, a marked spasm being present on the right side, and there was tenderness to pressure in the upper right quadrant on a line drawn from McBurney's point upward, most marked above the level of the navel. His temperature on admission, per oram, was 105.5, pulse 100. His white blood count was 22,400, with a differential count of 94-6 per cent. His coagulation time was 4½ minutes. I operated him the nineteenth with the assistance of Dr. Biram. A McBurney incision was made. On opening the abdomen a large quantity of milky fluid was found. The appendix was found to lead off the cecum, which was in a high sub-

hepatic position. The abdominal incision was enlarged upward by cutting across the fibres of the internal oblique muscle and by cutting the sheath of the rectus. The stump of the perforated appendix was then tied with difficulty. The abdominal wall was closed by reuniting the muscle fibres, and two drains were left in the abdomen, one to the appendical site and one to the pelvis. His post operative reaction was slight, and he was discharged from the hospital with a closed wound on the twenty-sixth day.

Case II.—P. K.; residence, Hartford; age, 42; male; entered the Hartford Hospital August 31st, 1913; discharged October 10th, 1913. Complaint, abdominal pain. Family history negative; habits, good; no previous illness; slight constipation. Present illness began four days before admission, when he had a sudden pain in the abdomen, referable to the umbilical region and followed by vomiting. The next day the pain was localized in the right abdomen. On examination, the right mid abdomen was tender; there was muscle spasm, and a mass was palpated just to the right of the umbilicus. Temperature was 100 per oram; the white blood count was 12,200, with a differential count of 89-11 per cent. With the assistance of Dr. Lampson, I operated him; a right rectus incision was made, and upon opening the peritoneum a small amount of milky fluid was found. The appendix was semi-gangrenous and had not perforated. The cecum was of fetal type and the descent had not taken place. The appendix was removed by ligation and no attempt was made to invert the stump. The abdominal cavity was drained. Patient made a good recovery. His wound was healed on the fortieth post-operative day.

Case III.—H. B.; residence, Hartford, Conn.; age, 44; cigarmaker; entered Hartford Hospital April 9th, 1913; discharged May 7th, 1913. I am indebted to Dr. Dwight Tracy for referring this case to me. Patient's complaint was pain in the upper right quadrant of the abdomen; family history was unimportant; habits, good; at the age of nine he had typhoid; in December, 1912, he had an attack similar to the present one; present illness began acutely ten days previous to admission, with pain in the whole right side of abdomen, at times radiating up the right chest; there was much nausea but no vomiting; patient was constipated; pain kept up with varying severity, becoming rather localized the last two or three days in the upper right abdomen and corresponding point in the back. Physical examination showed a well-developed man; heart and lungs normal. Abdomen showed considerable tenderness in the right upper side, with some general distention. Temperature on admission was 100.5; white blood count 13,600, with a differential count of 88-12 per cent. With the assistance of Dr. Tracy, I operated him April 9th. Right rectus

upper abdominal incision; many omental adhesions were found in the upper right abdomen; the large bowel was much injected; upon breaking through the adhesions a large quantity of foul-smelling colon pus came from near the right kidney; the gall bladder was normal. On account of considerable bleeding and the large amount of pus, it was thought best to drain the abscess site through a punctured wound in the right flank; the abdominal cavity was also drained through the rectus incision. Diagnosis was made of an undescended cecum with a perforated appendix. No attempt to remove the appendix was made. He made a good recovery and was discharged from the hospital on the twenty-eighth post-operative day.

June 25th, 1913, he reentered the hospital, with the history of being nauseated and having had a chill two days previous. He suffered with pain at the edge of the ribs posteriorly on the right side; physical examination showed a post-operative abdominal hernia; examination of right lung posteriorly gave tubular breathing, coarse and fine rales, friction rub, and impairment of percussion note; temperature on admission was 103; white blood count, 16,000; differential 90-10 per cent. June 27th the stab drainage wound in the loin became inflamed and opened and discharged about one ounce of pus; temperature reached normal on the twenty-ninth; and the extra-peritoneal, sub-diaphragmatic abscess continued to drain through the loin wound. He was discharged from the hospital July 11th with the chest practically clear and without any pus drainage.

On December 2d, 1913, he again returned to the hospital and nearly duplicated this illness. At this admission, on account of my absence, Dr. George Bell attended him and opened up the wound in the loin to drain the abscess, which was at this time also sub-diaphragmatic. January 1st, 1914, the patient again entered the hospital; at that time he had some drainage from his loin wound; he had been walking about two weeks, at times having some temperature. He suffered some pain in the right side of the abdomen, aggravated by deep breathing; white blood count, 9,600; differential, 64-31 per cent. On January 3d, with the assistance of Drs. Bell and Tracy, I operated him; the scar of the old upper right rectus incision was dissected out and the wound extended in length. The right iliac fossa was found to be occupied by the ileum, which ran upward on the right outer wall, taking the place of the usually located cecum and ascending colon. Along its course it was adherent to the outer wall and to the sinus opening, in the upper right flank, which was the seat of previous drainage. The adhesions were freed, the cecum was found in the right kidney fossa, no descent having occurred, and it was unrotated. The appendix was found retrocecal and perforated in its middle third; the stump was ligated, but no attempt was made to invert it; the abdominal wound was closed and a drain was inserted through

the flank wound. The following day the patient had a marked rise of temperature and the physical examination of the chest showed that the sub-diaphragmatic abscess had again filled, and on the sixth post-operative day his temperature reached its height of 105.5, from which time it fell by lysis, reaching normal on the thirteenth day. He was discharged from the hospital on the thirty-sixth day, his wounds being closed, and he has remained in good physical condition from that time to the present.

In conjunction with this case, I would like to refer to a case reported by Dr. Gerster in the *Annals of Surgery* for July, 1912. It was a case of a young girl upon whom he had made a diagnosis of a right perinephritis, but the case presented some abdominal symptoms and a right exploratory abdominal section was made; the gall bladder and the pelvis were found negative; the wound was closed and an incision was made over the right kidney, which was found congested, and the wound was drained. The symptoms persisted and the kidney was later removed; the pains recurred and the old kidney wound was again opened and an undescended cecum was found and a perforated appendix removed.

This case, together with Case No. 3 which I report, tends to show with what difficulty this condition may be diagnosed and how important it is to bear it in mind when dealing with pus conditions in the right abdomen. Perforated lesions of the lower abdomen are in the majority of cases from the appendix or Fallopian tubes; occasionally from the ileum or colon; caused by trauma, Pyer's patches or by a strangulated Meckle's diverticulum, but the upper abdominal lesions are more difficult to diagnose; it is harder to classify the symptoms and determine the viscus involved. The correlation of the nerve supply is intimate and the hollow viscera are closely grouped. I believe that any pathological condition that may be present should be borne in mind when taking an inventory of upper abdominal lesions.

In conclusion, I believe that the condition of undescended cecum is present in a larger majority of individuals than has been formerly believed; that this condition in itself causes no pathological symptoms, but when complicated with a diseased appendix, may produce symptoms closely simulating empyema of the gall bladder or perinephritis.

DISCUSSION.

DR. E. R. LAMPSON (Hartford): Mr. President, I think that the condition mentioned by Dr. Rowley is a most interesting one and he has gone into it so exceeding thoroughly and his conclusions are so trite that I feel there is very little to be said. I think that we all are exceedingly interested in conditions of abnormal development, not only those abdominally but also those that occur extra abdominally. For instance we are delighted when we get a branchial cyst, because it is so peculiar. It seems to give an interest that is all out of proportion to the surgical importance of the condition.

When we come to the unique abdominal lesion, the non descent of the cecum, we are confronted with a condition which it is almost impossible to diagnosticate previous to operation, and Dr. Rowley is to be congratulated that he did make the diagnosis in his last and fourth case which has just occurred. For to diagnose a condition such as this is really remarkable.

The first case of undescended cecum that I saw was when I was an interne in New York working under Dr. Joseph Blake, who was one of the finest anatomists who has been doing surgery in this country in many years. He was doing research work in comparative anatomy at the College of Physicians and Surgeons at the time and therefore these abnormal conditions were prominently before his mind. The case was that of a child nine years old who was brought to the hospital with a diagnosis of appendicitis and gave every typical symptom. He looked for the cecum and appendix but it was not found until the incision was enlarged upward; directly underneath the liver in the region of the gall bladder there was a nondescended cecum and a gangrenous appendix. The case was drained and the boy recovered. The second case that I have seen was one of those just reported by Dr. Rowley. The third case was one that I saw while assisting Dr. McKnight.

I agree with Dr. Rowley that this must be a very much more common condition than is ordinarily recognized. In the ordinary person, unless there is a pathological condition such as a gangrenous appendix accompanying such an abnormality, it would make no difference. When we open the abdomen and cannot find the appendix, we should at once think of the nondescended unrotated cecum.

Of course, there are other abdominal conditions and abnormalities that we should think of at the same time. For instance, there is the transposition of all of the viscera. I have a patient with a heart on the right side, the liver on the left side, and the spleen on the right side. Undoubtedly, that boy's appendix is on the left side. Of course, that is a very rare case. Nevertheless, that boy was carried through pneumonia by a physician in Hartford who didn't discover that his heart was on the

right side and it was discovered by the physical instructor in the Hartford High School. That physician is not a member of this society. Also rarely it is reported that the appendix is found on the left side without a general transposition of the viscera. All of these conditions are exceedingly rare, but it is in recognizing the abnormalities that we are going to get greater success in our surgical work.

DR. L. B. COCHRAN (Hartford): I understand I am to take Dr. Bell's place. This is a very interesting subject and one I dare say few of us are familiar with. We have here a congenital abnormality which as Dr. Rowley suggests is undoubtedly present much more frequently than is supposed and should be considered in all of the acute abdominal lesions. It does not prevent the almost endless chain of vague symptoms found in the allied congenital condition of the very loose and lax attachment of the abdominal viscera. Here we have the various drain traps with the gradual development of atony toxemia and all the curious manifestations resulting from malnutrition. In cases of undescended caecum there may be other abnormalities. Indeed, I should expect this to be the case, such as malposition of the transverse colon, the stomach or the small bowel. Ordinarily we should expect rather better drainage from the colon and especially of the caecum in this high position and a lesser tendency to infection and inflammations of the appendix. Abnormal congenital conditions in the abdominal cavity are undoubtedly very common. Among women one in every five has a loose kidney which usually is evidence of a loose attachment and sagging of all the abdominal viscera. Goldthwaite states that one in every five has too loose an attachment of the abdominal viscera. Among the ward cases in the Hartford hospital I have been amazed to see how many there are with markedly ptosed colons and stomachs.

These people, however, present rather chronic conditions and have lowered resistance as a result of malnutrition and consequently are very easy marks for all sorts of infection. Many of these conditions no doubt are required but a great majority of them are congenital, belonging to that curious type described by Stiller as *asthenia universalis congenita*, a condition resulting from poor social conditions, starvation, alcoholism, syphilis, tuberculosis and other diseases in the forebears.

In the presence of this large class of congenital malformations and malpositions it seems to me entirely reasonable to expect this curious phenomenon of the undescended caecum frequently. It is no doubt a defect or stigma resulting from the same general causes as the loose attachment of the viscera, the floating tenth rib, the neurasthenic type and therefore in every acute abdominal lesion whether high or low, whether on left or right appendicitis or appendical abscess, should be considered.

DR. WALTER L. BARBER, JR. (Waterbury): Mr. President, I enjoyed Dr. Rowley's paper very much. I don't know as it is necessarily in connection with malposition, there is one question that has always appealed to me with our work over at the Waterbury hospital. I was wondering in connection with his case there what would have been the after results, whether the subsequent operations would have been necessary, if the appendix had been ligated. So many cases come into the wards that have been in previously with an abscess and that abscess has perhaps been drained, but the appendix has not ever been ligated, and it seems so frequently that a second operation is necessary. They very seldom come in for it in the case of second abscess.

DR. A. M. ROWLEY (Hartford): I want to call your attention to one of these drawings, which shows the right hepatic flexure higher in the abdomen, than it normally is placed. Since we have been taking colon plates we find it much lower than was formerly supposed.

In regard to the question asked by the doctor from Waterbury, this man as he entered the hospital was extremely distended and a very fleshy man. We opened the abdomen through the right rectus and the bowel had a tendency to protrude under the terrific abdominal pressure. We found pus as far over in the kidney fossa as it was possible to reach, and we were not able to ligate or remove the appendix. Subsequently on his fourth admission to the hospital Dr. Bell and I hunted the abdomen over for at least twenty minutes before we were able to find it. It is not our practice to leave many appendices for fear of residual abscesses, and the necessity of performing second operations.

Values in Surgery.

E. W. SMITH, M.D., MERIDEN.

There are just a few of us old fellows still on the firing line whose enlistment into the service antedates modern methods of warfare. And it seemed to me that we might profitably take a short aeroplane trip back over the field of battle and snapshot some of the trenches taken, positions stormed, and men who have been leaders in the fight.

When I began study in the Yale Medical School in the fall of 1878, our beloved Carmalt was one of the instructors. Just a snapshot of Carmalt in the little classroom in the old medical school building—"What makes the rays of light entering the eye converge to focus on the retina?" asks Carmalt. The poor fellow being quizzed looked around appealingly to me. "Refraction," I whispered. "Reflection!" went to Carmalt. "If you can't prompt correctly, Smith, you had better not prompt at all," said Carmalt. I was more sore that Carmalt should think I didn't know than at being caught. Yes! Carmalt, our Nestor of Surgery in Connecticut. He has made numerous contributions to our science and art, notably the Carmalt clamp, a most useful instrument. Then our Thomas H. Russell. I can see him now, as I saw him then; a quiet young man coming into the surgical clinic, a row of surgeon's needles neatly placed in the lapel of his coat, all threaded with silk, ready for instant use. That was before the day of catgut, and other things, too numerous to mention here. The text-book in use at that time was Erichsen's Science and Art of Surgery, in two volumes, 1878 edition. We hunt its pages in vain to find mention of the appendix, vermiformis, gall bladder, or kidney as objects of surgical interest. No mention of bacteria as causes of inflammation, and nothing of antiseptics, or asepsis: but erysipelas, as the cause of a large number of deaths after operation, is mentioned. In the description of the operation for lithotomy, the

finger is introduced into the rectum, and perineal wound indiscriminately. But Pasteur and a host of others were at work in bacteriology, and Lister was at work coördinating their work to surgical practice, and dawn was breaking. When in the fall of 1880 I continued my studies at McGill Medical School, there had been a wonderful change. Sir Thomas Roddick, now—plain Tom Roddick, then, a young surgeon just back from England, full of Lister and enthusiasm, was clinical professor of surgery. That was the day of carbolic acid. One to twenty for instruments, and one to eighty for the big steam atomizers, throwing a spray from two corners of the operating room across the field of operation. It was to banish erysipelas from the hospital wards, and it did. But how loth were the great body of physicians and surgeons to accept and apply the germ theory in surgical practice. Lawson Tait, although himself using good antiseptic technic, was a bitter opponent of Lister and his teaching. How often I used to hear in the late eighties and early nineties Dr. Nickerson of Meriden declare with vehemence, "It is the solid particles of dirt that make the pus, not bacteria." By 1883 the opening of abscesses in the region of the appendix had become quite common. It was about that time that at the advice of Francis Bacon I opened such an abscess, put in a drain, and obtained a cure.

In 1887 Sands successfully closed perforation of the appendix with suture. About a year later I remember taking a patient down to Sands for advice. It was a case of broken back. After looking the patient over and shaking his head he said, his face lighting up, "Oh! doctor, why didn't you bring me down a good case, something I could help, an appendix?" I just mention that to show the eagerness and enthusiasm of the surgeon at getting into the new pastures opened up to him by Listerian principles. To Listerism is due all the modern developments of surgery in cranium, chest, joints and abdomen.

It took time, of course, for the surgeon to develop the surgical technic necessary to deal with the pathological conditions he encountered in these new fields. The time has flown swiftly since then and surgical values have been piling up rapidly. New means and methods have been and are being constantly sought after

to make the surgical diagnosis, operation, and after treatment successful. True values in surgery depend on the recognition and application to surgical practice of three sets of principles:—one relating to diagnosis, one to operation and one to the after care.

It would take volumes to elucidate the principles, and the means and methods developed and in process of development to insure correct diagnosis. Let it suffice us to mention just one; viz.: the response of various tissues of the body to pressure. Infectious foci developing to cause pressure get a speedy response, and the pain and tenderness lead the surgeon pretty surely to the appendix, gall bladder, kidney, joint, bone, or other locus mali. The more dense the tissue, the more severe the pain, and acute the tenderness.

There are three principles in particular applying to the technic of operations in general. First, avoidance of infection. Second, hemostasis. Third, avoidance of pressure necrosis from too tight ligatures and sutures. It is the care he takes in applying these principles, that the surgeon, using, in the words of Ochsner, "neither insane haste nor imbecile deliberation," is enabled to carry his operation to a successful issue.

AFTER CARE.

Many books have been written on post-operative treatment. I will name just one principle—the one I have found most useful; viz.: rest—the let alone as far as possible treatment. It is the care one takes in the application of these principles that makes for success and the obtaining of full surgical value. It is said that Sir Joseph Lister was like Kocher; each giving the greatest care to the diagnosis, technic of operation and after treatment, so as to make the recovery of the patient a mathematical certainty.

Now practically all the major, and a large part of the minor operations, are performed in our hospitals, which have developed wonderfully the past twenty years. The hospital reports give a comparatively accurate classification, and record of work done;

and it is easy to make a concrete estimate of surgical values in the State and country. We will be satisfied to give estimate of work done by our own members in Connecticut. Connecticut has, in round numbers, three thousand hospital beds—and twenty-five thousand operations were performed in 1914, with an estimated mortality of between 4 and 5 per cent. I wish to make just one comparison—*Ex uno disce omnes*. The Hartford Hospital—the largest in our State, and a worthy representative, reports three thousand three hundred and five operations for 1914 with mortality of 97—2.9 per cent. The Augustana Hospital of Chicago, one of the most noted hospitals in the country, reports for the year 1913 (the 1914 report is not yet out) two thousand, one hundred and fifty operations with mortality of 87. Approximately 4 per cent. It was about 1906 that Oliver C. Smith wrote his paper on the work of the Mayo Brothers. St. Mary's Hospital of Rochester reports 7,520 patients operated with mortality of 1.9 per cent. I think there is no doubt that the Mayo Clinic has played a leading rôle in the wonderful advance in quantity and quality of surgical values to people of this country. To Oliver C. Smith, more than to any one man, is due the growth of surgical efficiency in this State. We know how near to his heart was the hospital work in Connecticut—how anxious that the hospitals of the State should stand on a high plane. You in Hartford know what he has done for Hartford surgery. I can only speak for myself. What little I have done, has been largely due to initiative inspired by him; both in the written word and personal association.

We all know the close personal care he gave to the diagnosis, operation, and after treatment of every case. Zealous in his work, unsparing of himself; what courtesy, sympathetic helpfulness and charity he had for the rest of us. Let us strive to follow in the path he marked out.

And, in conclusion: We may be pardoned, for a feeling of satisfaction, at some good done by honest endeavor; if at the same time, we are duly humble, at the remembrance of opportunities lost.

PAPERS READ AT COUNTY
MEETINGS.

Papers Read at County Meetings.

HARTFORD COUNTY.

October 27, 1914.

PAPERS:

Treatment of Hæmorrhage with Fresh Animal Serum. Dr. Charles T. Beach.

Discussion opened by Dr. E. Terry Smith, Dr. John C. Rowley.

The Importance of Quick and Sure Diagnosis in Traumatic Lesions of the Abdomen. Dr. Howard F. King.

Discussion opened by Dr. George N. Bell.

Gastroptosis. Dr. Levi B. Cochran.

Discussion opened by Dr. Henry F. Stoll, Dr. Ernest H. Wells.

The Treatment of Fixed Lateral Curvature by the Abbott Method. Dr. Joseph E. Root.

Discussion opened by Dr. Harold A. Pingree, associated with Dr. Abbott, Portland, Maine.

April 6, 1915.

PRESIDENT'S ADDRESS. Dr. Wm. R. Miller.

PAPERS:

The Value of Caloric Feeding in Typhoid Fever. Dr. Kenneth E. Kellogg.

Discussion opened by Dr. Howard W. Brayton.

The Advantages of the Gilliam Operation for Uterine Displacements. Dr. Andrew M. Outerson.

Discussion opened by Dr. Arthur J. Wolff.

Cerebro-Spinal Syphilis; Varieties, Treatment, Presentation of Patients. Dr. Henry F. Stoll.

Discussion opened by Dr. Whitefield N. Thompson, Dr. John C. Rowley.

Bone Graft for Tuberculous Spine. Dr. James C. Wilson.

Discussion opened by Dr. Robert M. Yergason, Dr. Ansel G. Cook.

NEW HAVEN COUNTY.

October 22, 1914.

LITERARY EXERCISES:

Dietetics in Typhoid. Dr. Charles J. Foote, New Haven.

Discussion opened by Dr. F. N. Loomis, Derby.

Febrile Affections Producing Hemolysis. Dr. George Blumer, New Haven.

Discussion opened by Dr. Charles J. Bartlett, New Haven.

The Question of Intestinal Stasis. Dr. Walter L. Barber, Jr., Waterbury.

Discussion opened by Dr. Oliver T. Osborne, New Haven, Dr. A. A. Crane, Waterbury.

April 22, 1915.

CLINICS :

Presentation of Surgical Cases and Operations. Dr. William F. Verdi, Dr. Willis H. Crowe.

Presentation of Medical and Neurological Cases. Dr. George Blumer, Dr. Max Mailhouse, Dr. Wilder Tileston.

LITERARY EXERCISES :

Twilight Sleep and the General Practitioner. Dr. Wellington Knipe of New York City.

Discussion opened by Dr. T. V. Hynes, Dr. R. F. Rand, Dr. H. K. Thoms (by invitation).

The Medical Versus the Surgical Aspect of Hyper-Thyroidism: The Medical Aspect, Dr. Frederick G. Graves; The Surgical Aspect, Dr. Joseph M. Flint.

Discussion opened by Dr. M. J. Lawler, Dr. O. T. Osborne.

NEW LONDON COUNTY.

October 1, 1914.

(In conjunction with the seventh Semi-Annual Meeting of the Connecticut State Medical Society.)

ADDRESS OF WELCOME. Dr. W. Henry Gray.

REMARKS BY THE STATE PRESIDENT. Dr. O. C. Smith.

REMARKS ON THE INTERNATIONAL CONGRESS OF SURGERY. Dr. R. W. Kimball, Dr. P. J. Cassidy.

Clinic-Mental Diseases—Classification and Demonstration. Dr. Pollock and Assistants.

April 1, 1915.

REPORT OF CASES. By members.

FAIRFIELD COUNTY.

October 13, 1914.

PAPERS :

Defective Children and their Treatment. Dr. Graeme M. Hammond, New York City.

Discussion opened by Dr. Max G. Schlapp, Dr. J. C. Lynch, and Dr. C. N. Haskell.

Medical Inspection of Schools. Dr. F. H. Barnes, Stamford.

Discussion opened by Dr. Ober and Dr. Sherman.

Some Experiences in the London Hospitals. Dr. J. W. Wright.

Discussion opened by Dr. Hertsberg and Dr. Ellis.

April 13, 1915.

PAPERS :

Reynaud's Disease. Prof. O. T. Osborne, Medical Department, Yale University.

Discussion opened by Drs. Haskell, Cowell, Coops, and Gardner.

Amputation of the Thigh; with a Report of Five Cases. Dr. J. F. Shea.

Discussion opened by Drs. Brown, Sherill, Roberts, and Bill.

WINDHAM COUNTY.

October 15, 1914.

PAPERS :

Surgical Cases. Patients to be present. Dr. S. B. Overlock.

The Seeming Inconsistency of Health Officers' Doings. Dr. W. H. Judson.

Autogenous Vaccines. Dr. M. J. Bullard.

An Unusual Case of Pneumonia. Dr. E. R. Pike.

Discussions.

April 15, 1915.

PAPERS :

Compensation Act. Dr. James J. Donohue.

Infant Feeding. Dr. R. C. Paine.

Discussion.

LITCHFIELD COUNTY.

June 12, 1914.

THE SESQUI-CENTENNIAL MEETING OF THE LITCHFIELD COUNTY MEDICAL ASSOCIATION.

PAPERS :

The Clergyman and Physician. Rev. John Calvin Goddard.

The Lawyer and Physician. Hon. Donald T. Warner.

The Editor and Physician. Mr. I. E. Manchester.

Retrospective Surgery. Dr. F. S. Dennis.

Historical Address. Dr. J. C. Kendall.

Retrospective Medicine. Dr. W. H. Welch.

Occupational Diseases. Dr. W. Gilman Thompson.

October 13, 1914.

PAPERS :

The Feeble Minded. Dr. Charles T. LaMoure.

The Present Status of the Tonsil Question. Dr. W. E. McClellan.

Discussion.

Gynecological Cases Bordering on the Medical. Dr. C. R. Hyde, Clinical Professor of Gynecology and Associate Visiting Gynecologist, Long Island College Hospital, Brooklyn, N. Y.

April 27, 1915.

PRESIDENT'S ADDRESS. Dr. Elias Pratt.

PAPERS:

- Appendicitis and the General Practitioner. Dr. D. D. Reidy.
- General Discussion and Reports of Cases by Members.
- Reports of any Cases of Unusual Interest.
- Exhibition of Cases.

MIDDLESEX COUNTY.

October 8, 1914.

SYMPOSIUM UPON RECENT MEDICAL AND SURGICAL PROGRESS:

- Medicine and Therapeutics. Dr. C. B. Chedel.
- Surgery. Dr. C. B. Young.
- Roentgenology. Dr. J. E. Bailey.
- Obstetrics. Dr. Irwin Grannis.
- Psychiatry. Dr. F. H. Barnes.

ADDRESS BY STATE PRESIDENT. Dr. O. C. Smith.

CLINICAL REPORTS:

- Dr. J. E. Loveland.
- Dr. A. J. Campbell.
- Dr. James Murphy.
- Dr. Charles E. Bush.
- Informal Discussion.

April 8, 1915.

PAPERS:

- Arterial Tension. Dr. F. B. Bradeen.
- Discussion opened by Dr. James T. Mitchell.
- Erysipelas. Dr. Hamilton Rinde.
- Discussion opened by Dr. Jessie W. Fisher.
- The Relation of the Ductless Glands and Intestinal Toxins to the Origin and Perpetuation of Epilepsy. Dr. J. F. Calef.
- Discussion opened by Dr. J. M. Keniston, Dr. John H. Mountain.

TOLLAND COUNTY.

October 20, 1914.

PAPERS:

- Influence of Diet on Disease. Dr. Wilder Tileston, Assistant Professor of Medicine, Medical Department, Yale University.
- Some Cases. Dr. John P. Hanley.
- Discussion opened by Dr. Wright B. Bean, Dr. Edward A. Brace.

VOLUNTARY PAPERS.

GENERAL DISCUSSION.

April 20, 1915.

PAPERS :

Value of Blood Pressure Estimations for the General Practitioner.

Dr. George Blumer, Dean and Professor of the Theory and Practice of Medicine, Medical Department, Yale University.

Pneumonia. Dr. Frank M. Dickinson.

Discussion opened by Dr. Thomas F. O'Loughlin, Dr. John P. Hanley.

Medical Ethics. Dr. Wright B. Bean.

Discussion opened by Dr. James Stretch, Dr. William L. Higgins.

VOLUNTARY PAPERS.

GENERAL DISCUSSION.

OBITUARIES.

George Cornelius Bailey, M.D., Hartford.

DANIEL F. SULLIVAN, M.D., HARTFORD.

Only a few days have passed since this Medical Society was called to mourn the death of the subject of this memoir, Dr. George Bailey, universally regarded as one of our most able, talented, and respected members of the Hartford County Medical Association of Connecticut.

The event of his death was so much the more deplored because of his many excellent social qualities, and his remarkable personal popularity, as well as his rapidly increasing usefulness as an educator of the youth of our city, and because of his ability as a medical and surgical consultant.

Had Dr. Bailey been spared to the age ordinarily allotted to the more favored portion of his race, he would doubtless have earned fame as a great surgeon, for he unquestionably possessed all the attributes of a superior mind, blended with the accomplishments of a varied if not a profound scholarship.

Thousands of his clients in this city and State looked up to him as best qualified by nature, education, and opportunity to illustrate the art of science and of surgery.

Dr. George Bailey was born in Hazardville, this State. Placed at school at an early age, he evinced extraordinary sprightliness of mind, acquiring knowledge with great facility, and soon outstripped most of his companions; his classical education was obtained at Wesleyan Academy, at Wilbraham, where he remained until the completion of his eighteenth year pursuing his studies with ardor and proficiency. After he was graduated he taught school, being still too young to begin the study of medicine.

The personal popularity of George Bailey was very great, the warmth of his manner, his kind and genial disposition, his enthusiasm, his well-known integrity, and the uncommon interest he took in the early period of St. Francis' Hospital construc-

tion, all conspired to render him most popular with the staff, the directors, the Sisters, and the patients; doing nothing merely for the sake of doing it, but always for a definite object, his work was imbued with religious feelings, and there is no doubt that these feelings exercised a most salutary influence upon his career as a man, a surgeon, and a citizen.

Dr. Bailey's illness was sudden and violent. A day before he performed a serious operation, and was feeling fairly well for him. The attack was one of pneumonia, and such was its vehemence, that it proved fatal in a few days.

The sad event created much sympathy. A doctor full of talent and ambition had been cut off in the vigor of his mentality, and in the hour of his usefulness; Hartford had lost one of her popular doctors, and the crowded church, and the long train of mourners, as they carried the remains to their last resting place, attested their appreciation of his worth in heartfelt sobs and sighs, such as the worthy alone merit and receive, when called away from the scenes of their earthly labors.

For some years he was afflicted with cardiac asthma, but he bore it with singular fortitude, never complaining, nor would he allow it to interfere with his daily duties. Some men accomplish in months or weeks that which it will take others years to do. Time does not measure the actions or deeds of men, and the subject of this memoir was one of those men, who in increasing activity wore out the vital forces, which in others last beyond the age at which he died.

Few men have had warmer or more attached friends, and were this intended for a long memoir many most interesting instances might be related of his close intimacy with the distinguished men of his own profession and with the Catholic hierarchy of this State, by whom he was particularly loved.

He possessed a sensitive, generous, loving spirit, blended with a confiding manner, a smile, a laugh that strongly marked him a lovable, happy companion. His feelings were quickly excited, and warmly expressed, resenting unkindness or injustice, but there was a magnanimity in his nature that readily forgave an injury. Ever ready to afford assistance, whether

professionally or otherwise, with generous impulses, and forgetfulness of self, he attained the most unbounded popularity among the poor of our community, as shown by their strong manifestations of respect at the time of his death. His name is still and will be a household word amongst them.

St. Francis' Hospital of this city, an institution established upon the noblest principles of enlightened charity, will perpetuate the name of one of its founders.

Many testimonials of respect produced at his death, and resolutions couched in strongest language, attest his worth as a citizen, doctor, and as a friend. The crowning feature of Dr. Bailey was that he was a Christian, one who not merely bent the suppliant knee to the altar, but one whose heart beat in generous religious fervor to his God.

James Dermott Hayes, M.D., Torrington.

TIMOTHY M. RYAN, M.D., TORRINGTON.

Physicians see much of, but, as a class, think little of death. They stand in its presence so often that they come to look upon it as a matter of course. It is only when some dear friend or close associate passes to the Great Beyond that we give even a thought to the world beyond the grave, and this thought is forced upon us with telling effect when the object of death's visitation is not one who had reached the proverbial three score years and ten of the Psalmist, but one who, in the ordinary course of events, ought still to be in possession of his full mental and physical vigor.

There is not a physician in Torrington who was not shocked beyond measure—in fact our whole community was so affected—when the news reached us from Woodmont on June 20th that Doctor James Dermott Hayes had passed away at the Peck Sanitarium of that place, having succumbed to an organic heart lesion after a fight of several months.

Dr. James D. Hayes was born in the city of Syracuse on the fifteenth day of August, 1869. As a boy he attended the public schools of his native city, graduating from the Syracuse High School in 1888. Desiring a more liberal education and a broader degree of culture as a necessary foundation for the profession he intended to follow, he came to New York City and entered Manhattan College in the fall of the same year. After a three-year residence at that institution he was rewarded with the degree of B.S. in 1891. Having made up his mind to make medicine his life work, he entered the medical department of New York University and was graduated an M.D. with the Class of 1894.

Soon after his graduation Doctor Hayes received an appointment on the staff of the almshouse of New York City at North Brothers Island, where he remained sixteen months, and where

he had ample opportunity of studying the diagnosis and treatment of the various contagious diseases, especially of childhood, which knowledge, in after life, stood him in good stead.

Doctor Hayes came to Torrington in July, 1895, and soon acquired a large and lucrative practice. At the time of his arrival the town had a population of about nine thousand, but when he died, almost twenty years later, this population had grown to twenty thousand souls, so that although the Doctor did not go West according to the advice of Horace Greeley, he nevertheless was fortunate in coming to a community whose growth and progress resembled more closely a western city than a staid old New England township.

There is, perhaps, a modicum of truth in the old adage "Physicians never get bread until they have no teeth to eat it," but this was not even remotely true in the case of Doctor Hayes. From the very earliest years of his professional career he attracted a numerous and profitable clientele and, as years went on and his services became more and more in demand, he developed a special liking for obstetrics and soon became very proficient in this particular branch of medicine. In it his services were widely sought. It is literally true that, during the last ten or dozen years of his life, Doctor Hayes presided at more than half of the births occurring in the borough and town of Torrington.

On the twenty-eighth day of November, 1899, Doctor Hayes was married to Christina O'Brien of Brooklyn by the Rev. Edward Brennan. From this union there was born, on September 18th, 1900, his only son, Albert, who is, at present, a sophomore in the Torrington High School. He was his father's greatest chum and the companion of many of his fishing trips—a sport of which Doctor Hayes was very fond and which was practically the only relaxation he allowed himself from his busy professional duties.

The home life of Doctor Hayes was ideal; although he was a member of the Torrington Club, the Torrington Lodge B. P. O. E. and the Foresters of America, he cared little for clubs, lodges or societies, or for the so-called Social Hour which

proves the undoing of so many of our profession, but when his day's work was done—and it was seldom done—he repaired to the bosom of his family.

Doctor Haynes' tireless energy on behalf of his numerous patients probably undermined his once magnificent constitution. This was particularly true during the fall and early winter of 1911. Before the opening of the emergency hospital, I happen to know, Doctor Hayes cared for at their homes more than sixty typhoid patients and, although he stuck bravely to his work until the spring of the year, his friends had noticed that he was losing weight rapidly; the healthy glow that once illumined his cheeks could be seen no more, his once sturdy stride had lost its elasticity, but, loving his work as he did with all his golden heart, he bravely kept at it until March of the present year, when he entered the Peck Sanitarium, from which he never returned except for a very brief period of a few days for the purpose of straightening out his affairs. When he laid down life's burdens on June 20th Torrington lost one of its very best citizens, his patients lost a good and conscientious physician, and his family, with whom we all sympathize, a loving husband, a fond father and an affectionate brother, all of whom hope and pray that

"After life's fitful fever
He may rest well."

Miner Comstock Hazen, M.D., Haddam.

FRANK K. HALLOCK, M.D., CROMWELL.

Dr. Miner C. Hazen, the oldest member of the Middlesex County Medical Association, and for the past eight years the dean of the medical fraternity in the county, died at his home in Haddam on Christmas Day, 1914, at the ripe age of eighty-five years and ten months.

Dr. Hazen was born February 11, 1829, in Agawam, Mass. After teaching school three years in Bristol, Conn., he decided to study medicine and received his degree from the University of Michigan in 1855. He immediately settled in Middletown, Conn., where he practiced for five years. In 1860 he removed to Haddam, where for nearly a half-century he successfully carried on a true country practice. In addition to strictly medical ministrations he was the wise counselor and sincere friend of many families throughout the wide territory which he covered.

In 1905, ten years ago, the physicians of Middlesex County gathered at Dr. Hazen's home to celebrate the fiftieth anniversary of his practice of medicine. To witness the expression of affection and esteem in which this good man was held was a most happy and inspiring experience.

At about this time he began to withdraw from active practice, but it was not until four years later that Dr. Hazen was forced to complete retirement by being violently thrown from his carriage. From this time he slowly but steadily declined. Although entirely helpless the last two years, his mind was remarkably clear and alert to the end. The funeral services were held in the Congregational Church of which he had been a prominent and faithful member during his entire life in Haddam. Although the day was very cold and the traveling dangerous, nearly one-third of the entire membership of the Middlesex County Medical Association attended the service. Too often the honors paid a just man are reserved for his last rites. Happily

this was not the case with Dr. Hazen. Throughout his retirement the physicians of the county have delighted to pay him their respects by sending him at every annual and semi-annual meeting a message of remembrance and good wishes.

Dr. Hazen was of English, German and Scotch ancestry. His father was a stanch old Puritan who brought up his eight children according to the strict ideals of that day. Dr. Hazen's strong religious faith and sound integrity bear witness to this ancestry and training. While teaching school in Bristol he married Miss Lemira R. Judson and of this union six children and four grandchildren survive. Four sons live in New York and two daughters, Mrs. Frank H. Arnold and Miss Lucy A. Hazen, reside in Haddam. Of the four sons, George H., Edward W., and Josiah J. are successful business men and Dr. Henry C. Hazen is the favorably known specialist in genito-urinary diseases.

Dr. Hazen was noted for his faithfulness in attending medical meetings and in this respect he was a constant example to his less zealous brethren. Attendance at such gatherings he considered a duty that he owed the profession. Furthermore, he went in the spirit not merely to receive, but to give what he could, to play his part. He was especially devoted to his State and County Societies, the latter of which he had served as clerk and president and the former as vice-president and a member of various important committees. He was also a member of the Central Medical Association of Middletown and the American Medical Association. He was a charter member of Granite Lodge, A. F. & A. M.

For six years he served Middlesex County as Commissioner and as such Dr. Hazen played a conspicuous part in the establishment in Haddam of the County Home for Orphans. In 1895 he was appointed by the County Medical Society one of the Committee of Five to inaugurate the movement which led to the founding of the Middlesex Hospital. In addition to being an original incorporator, Dr. Hazen was also a member of the Consulting Staff. In these later years it was his desire to retire and give place to another, but the Directors of the Hospital,

gratefully remembering his unfailing interest and efficient labors, have insisted on retaining him on their medical board.

The arduous duties of a country practitioner did not permit Dr. Hazen to acquire a medical reputation of more than local prominence. He had, however, all the interest and disposition to make the most of his talents and from time to time contributed articles of merit. His last paper, entitled: "Some Early Practitioners of Haddam," was published in the Proceedings of 1907 and is prized for its historical value.

Dr. Hazen was of the quiet, unassuming type yet possessing the force of firm and just convictions. He hated show and pretence. He was especially kind and encouraging to the younger men in the profession. His natural geniality, his wise counsel, his abiding interest in his profession and his sterling qualities as a man will be a cherished memory, a goodly heritage of which the physicians of this county and state may well be proud. To pay homage to our seniors, especially if they are sane, sound and full of kindness, should be the delight of all men. *Maxima reverentia debetur senibus.*

Curtiss Clark Hoyt, M.D., Bridgeport.

GEORGE W. OSBORN, M.D., BRIDGEPORT.

Dr. Curtiss Clark Hoyt died suddenly at his home in Bridgeport, Conn., on March 5, 1915.

He suffered for several years from diabetes, but was able to attend to his professional duties until a few weeks of his death.

The son of Lewis Clark and Sarah (Hough) Hoyt, he was born in Danbury, Conn., July 28, 1852.

The Hoyt family is of Colonial stock, and Noah Hoyt, the Doctor's great-great-grandfather, was born probably in America, and according to some authorities made his home at or near the site of Danbury. He died at the age of one hundred and seven years.

Jesse Hoyt, our subject's great-grandfather, was probably a native of Danbury, and he was a farmer by occupation. He died at the age of one hundred and one years.

Lewis Stephen Hoyt, the grandfather of our subject, was born in Danbury and became a farmer there. He was also a noted surveyor of the early days, and laid out the city of Danbury. He was a member of the Legislature, a deacon of the Presbyterian Church, and was known as "Deacon Lewis." He was a strong, forcible character, and a leader among men. He died about 1859 or 1860.

Lewis Clark Hoyt, our subject's father, was born in 1824, and reared at Danbury. After spending some years as a school teacher, he engaged in surveying and in the insurance business, being the only agent there for many years, and he was the first in the place. He was known as "Clark Hoyt," and was a successful man in all his dealings. In addition to all this he was a burgess of Danbury, and city surveyor. He died in that city, April 1, 1865.

His wife, Sarah M. (Hough), was born in Trenton, N. J., of English descent, a daughter of William Case Hough, a resident of Madison, Wis., at the time of his death, a surveyor by

occupation, which he followed all through the State of Wisconsin. She died May 10, 1887.

Our subject was one of a family of five children, the others being Sarah E., who married James Cummings and died in Danbury in 1886; Carrie, who died in 1862; Hattie E., who became a trained nurse, and afterwards married Dr. Frederick Lyons of New York City; and Lewis C., an engineer on the New York, New Haven and Hartford Railroad.

Dr. Hoyt attended the public schools of Danbury until he reached the age of twelve years. He then found employment, and was engaged in different occupations, among them, learning the hatting trade, but his cherished wish to enter the medical profession was sustained through all discouragements.

In 1883 he began a study by preparatory reading with Dr. A. E. Adams of Danbury, with whom he remained a year and a half, and later, October 1, 1885, he entered the College of Physicians and Surgeons in New York City, graduating May 10, 1887, being the last man who graduated from that College in a two-years' course. On June 3 of the same year, he located in Bridgeport where he speedily gained a desirable practice.

He was for many years a member of the Bridgeport Medical Association, and at the time of his death a member of the Fairfield County Medical Association and the Connecticut State Medical Society. He was city physician and surgeon to the Emergency Hospital from 1888 to 1892, being one of the original surgeons to that institution. He was president of the board of health for four years during Mayor Bostwick's administration. In politics he was a Democrat, and wherever he resided, he took a keen interest in local affairs. While in Danbury he served as justice of the peace and for some time was chief engineer of the fire department.

I have been acquainted with Dr. Hoyt for the past thirty years. He roomed with me during the two years that he was studying medicine and graduated in the same class with me at college. He was associated with me at the Emergency Hospital and as medical examiner for the Metropolitan Life Insurance Company.

He was for many years an active and prominent figure in the West End. He was large in stature, genial in disposition, and a lover of all the good things in life. He was honest and conscientious in his professional work, and prompt and attentive to duty. He was a storehouse of general information. He had a remarkable memory, graduating from the College of Physicians and Surgeons without having taken a note in the course of lectures. He was an ardent sportsman. He made many fishing trips. For years he kept a fishing lodge at Bantam Lake. He was one of the original members of the California Club, whose clubhouse opposite St. Mary's-by-the-Sea was a rendezvous for prominent West End citizens and politicians. He was medical examiner for the Metropolitan Life Insurance Company of New York for the past twenty-three years.

Dr. Hoyt was twice married. His first wife, who was Miss Anna E. Crofut, daughter of George and Mary Crofut of Danbury, died in 1887, and he afterwards married Miss Hattie M. Rees of Bridgeport, who was born in Massachusetts, daughter of Abram L. and Pauline Rees. She died Oct. 23, 1908. His only child, the offspring of his first wife, died in infancy.

He was connected with various organizations, including the I. O. O. F., in which he passed the chairs, was noble grand in the subordinate lodge and in the degree of Rebekah, also high priest in Encampment No. 5.

He was a member of St. John's Lodge, F. & A. M., of this city; Jerusalem Chapter, R. A. M.; Arcanum Lodge, I. O. O. F.; Court Waldemere, Foresters of America, and Catalpa Circle, Lady Foresters, of which he was physician at the time of his death.

His funeral service was held at his late residence and conducted by Rev. Dr. Swain of the South Congregational Church. The many beautiful floral offerings from friends and organizations to which he belonged were tributes to his memory.

The body was taken to Pittsfield, Mass., for burial in the family plot in the Pittsfield Protestant Cemetery.

Arcanum Lodge of this city exemplified its funeral ritual at his home, and the officers of Mystic Lodge, F. & A. M., of Pittsfield, conducted the Masonic burial at the grave.

Frederick Eugene Johnson, M.D., Mansfield Depot.

ELI P. FLINT, M.D., ROCKVILLE.

Dr. Frederick E. Johnson, son of Abel and Sarah Goodell Holt Johnson, was born in Willington, Conn., June 5, 1847, and died March 28, 1915, of pulmonary tuberculosis at Mansfield Depot, where he had been for more than thirty years a successful practitioner of medicine in Mansfield and adjoining towns.

He had three brothers: LeGrand, who engaged extensively in the preparing for market and sale of lumber, and who died several years ago; Elisha, who served in the Civil War in the Fourteenth Regiment, Connecticut Volunteers, was in the battle of Antietam ten days after leaving Connecticut, and died of chronic diarrhoea after one year of service, and Truman, for many years a medical missionary in Burmah, India, where he died recently.

He had also one sister, Grace J., who is the wife of George A. Huntington of Mansfield.

Dr. Johnson was a member of the Cranston Street Baptist Church of Providence, R. I. He was a Republican, though never active in politics, and though a truly public-spirited citizen and in favor of every measure that he believed made for the welfare of the public, whatever service he rendered the public was done quietly and without ostentation.

By reason of his interest in fruit-raising, he was a member of the Connecticut Pomological Society, also, for several years, he had been a director and vice-president of the Savings Bank of Tolland, and was a member of the Tolland County Medical Association and the Connecticut State Medical Society.

He was faithful to the home life and well pleased when devoting his surplus time and energy to the care and improvement of his neat and tasteful home and the acres connected with it.

The endurance of but few men extends beyond the exactions of such a practice as his. Yet while he performed faithfully and well his professional work, he proved his endurance and

resourcefulness by directing successfully the development of a productive and profitable fruit farm on his own land, from which were shipped thousands of baskets of small fruits to Providence and other markets.

Dr. Johnson was twice married. His first wife, daughter of Ira Fisk of Willington, to whom he was married in 1874, died in 1882. His second marriage was June 10, 1885, when he married Emma L., adopted daughter of Amos Jacques of Ellington, who still survives him. There was born to them one daughter, Grace, who died May 13, 1890, aged two years and eight months. A sad blow to the home-loving physician.

The story of Dr. Johnson's early life can be briefly told. He acquired his preliminary education in the schools of his native town. He remained at home and assisted his father, who was a farmer, until he was sixteen years old. He removed to Atlantic County, New Jersey, where he taught school and also for some time engaged in fruit growing. At the age of twenty-two he became the druggist in the Providence (R. I.) Hospital and later had charge of the male ward.

The doctor's experience in that hospital proved of especial value to him while he was pursuing his studies during his medical course, and also later when he engaged in the practice of medicine. His habit of thoroughness, of doing well whatever he undertook, enabled him to acquire a thorough knowledge of the handling of drugs and medicines, as well as their therapeutic properties. While in the ward he became quite an adept in the art of bandaging and in the various other mechanical adjuncts to medical practice.

Under the direction of Dr. E. Kingman of the hospital he began the study of medicine but after a time returned to Connecticut and assumed the management of a farm for two years.

He then resumed his medical studies with Dr. Melancthon Storrs of Hartford, entered the medical department of the University of New York and was graduated in 1879. Directly after his graduation he located at Mansfield, and with his natural earnestness and energy took up the strenuous life of the rural practitioner.

Nature had been generous and kind to Dr. Johnson, and his tall figure and fine physique would have made a marked impression in any community. Coupled with this, his implicit faith in the therapeutic value of the resources of the physician's art and a never-failing yet unobtrusive air of self-poise and self-reliance, rendered it easy for him to win the confidence of his patients.

His self-control and evenness of temperament were remarkable. During a long acquaintance the writer does not recall his ever showing any indication of impatience or excitement. This is perhaps suggestive as one reason for his unusual hold upon his practice, and it may give us a glimpse of the gentler and more humanitarian qualities to know that he was wont to carry flowers from his own gardens to cheer the suffering in less favored homes.

Henry Russell Lowe, M.D., Putnam.

EDWARD F. PERRY, M.D., PUTNAM.

Dr. Henry Russell Lowe died at his home in Putnam, Nov. 2, 1914. About three months prior to his death, he had a slight cerebral hemorrhage, from the effects of which he had never fully recovered, and a persistent high arterial pressure made it evident that the inevitable could not long be postponed. He continued, however, to make his professional calls as usual, but contrary to his usual custom, never drove alone. The final stroke came suddenly after his daily round of calls and evening office hours were completed.

Funeral services were held at his late home and the remains were taken to Shrewsbury, Mass., for burial.

He was born in Mercer, Maine, Jan. 20, 1849, received his early education in the public schools of his native town, and prepared for college at Eaton Academy, Norridgenock, Maine. He received his medical degree from Dartmouth College in 1882.

He practiced medicine in Worcester, Mass., for two years, and Woodstock Valley for seventeen years prior to coming to Putnam in 1901.

He was married to Mrs. Exora Holbrook Stanton in 1884, who, with a brother, a sister, and an adopted daughter, survive him.

He was a member of the Quinebaug Lodge of Masons, Putnam Council Royal Arcanum, the Connecticut State Medical Society and a past president of the Windham County Medical Association, a member of the city board of health, and one of the visiting staff of the Day-Kimball Hospital.

Personally, Dr. Lowe was sympathetic, unassuming, kind-hearted, generous and retiring. He never sought public office, and cared little for society, preferring his home, surrounded by relatives, friends and his pets. Professionally, he approached the old-fashioned type of family physician, and many eminently

scientific and scholarly physicians might well envy Dr. Lowe the confidence which his patients placed in his skill and judgment. He was disposed to be lenient in his charges, especially toward his poorer patients, and earned for himself the reputation of being good to the poor, which is more often associated with a life of self-denial than with a lucrative practice.

Henry Smith Noble, M.D., Middletown.

ARTHUR B. COLEBURN, M.D.

In the death of Henry Smith Noble, for thirty-five years an expert in mental diseases and for fourteen years Superintendent of the Connecticut Hospital for the Insane, the medical profession has lost a loyal worker, the mentally afflicted a tireless, wise and experienced helper, and the state an able administrator and an official whose whole life was a continuous and willing sacrifice to duty.

He had been ill much of the winter of 1914-15, but remained at his post overseeing the manifold activities of the hospital until in March, when his health failed so far that he went to the home of his nephew, Dr. George A. Bidwell in Waterbury, Vt., for rest and change of scene, dying there March 16, 1915, of heart and kidney disease.

Dr. Henry Smith Noble was born October 8, 1845, in Hinesburg, Vt., of old New England stock, being seventh in descent from Thomas Noble of the Boston colony.

He received his early education in the Hinesburg Academy and the Green Mountain Institute at South Woodstock, Vt., and his Baccalaureate degree from Tufts College in 1869, standing second in his class. After a course of medical lectures at the Vermont University, he entered the New York College of Physicians and Surgeons, from which he acquired his medical degree, receiving the honorary degree of LL.D. from his Alma Mater in 1905.

After his graduation in 1871, he received an appointment as interne at the Hartford Hospital. After completing his service at Hartford, he established himself in private practice in Chester, Vt., where he remained until his appointment as second assistant physician at the Hartford Retreat in 1879. In 1880 he entered the service of the state at Middletown as assistant physician, and was assigned to duty at the newly-built "Middle" Hospital of four hundred beds.

Two years later he took a similar position at the State Hospital for the Insane at Kalamazoo, Michigan, returning to Middletown in 1884.

While abroad in 1886 for study and recreation, he was appointed first assistant physician, and on the death of Dr. Olmstead in 1898, declining the office of superintendent, his title was changed to assistant superintendent, so remaining until Dr. Page's resignation in 1901, when he accepted the superintendency.

During the interval marked by the dates of his appointment as assistant physician and his death in the office of superintendent, the population of the Connecticut Hospital for the Insane grew from 510 in 1880 to 2,566 in March, 1915; nearly 14,000 patients having been received during these years.

With the greater number of these Dr. Noble came in intimate relation, and the writer believes that every patient who recovered, and practically everyone whom he failed to restore to reason, regarded Dr. Noble with gratitude and affection.

During the many years of his active medical practice, Dr. Noble never lagged behind in the advance of our science, and his interest in new methods of diagnosis and treatment of disease has been a constant inspiration to his medical colleagues.

In addition to medical literature, he was well read on technical subjects useful in his administrative work, and had a generous appreciation for the best general literature.

Advances in psychiatry, so marked in the past twenty years, he recognized and assimilated promptly, and his keen insight and quick adaptation to new viewpoints kept him well in the lead in the further developments of his specialty.

His contributions to medical literature were characterized by the same depth of insight, incisiveness and literary quality that marked his discourses in the daily hospital clinic.

As consultant and court expert he was deliberate and thorough, never swerving from his mature convictions, and enjoying a well deserved reputation for absolute fairness and truth.

Though through instinct and the necessities of his position his day was crowded with a multiplicity of details demanding personal attention, he always found time to listen patiently and

kindly to all in need of his advice, whether patient, employee, colleague or others with even less legitimate right to call on him, cheering by counsel and reasoning, resolving perplexing problems, and generously and sympathetically aiding all who appealed to him.

All of us who have been brought in contact with any of the thousands of Dr. Noble's former patients, or their near relatives, have been profoundly impressed with the respect, regard and esteem in which this kindly friend and wise physician was held throughout the state, and even beyond its borders.

With his high conception of duty and of the dignity of his profession, he held the love and respect of all physicians who served the state with him and under him, and by his consideration of others and high ethical standards impressed on them a higher impulse toward the service of humanity.

In 1871 Dr. Noble married Miss Edna Chaffee, who survives him.

Dr. Noble was a member of the Masonic Order for over forty years. In addition to local, county and state medical societies, he was a member of the New England Psychological Society, the New York Neurological Society, the American Medico-Psychological Society and the American Academy of Medicine, and was vice-president of the Connecticut Society for Mental Hygiene.

William Sheldon Clark Perkins, M.D., Norwich.

ANTHONY PECK, M.D., NORWICH.

Dr. William Sheldon Clark Perkins was born in East Lyme, Conn., February 1, 1837, where his father, Dr. Austin Perkins, was a practicing physician.

Early in life he attended the schools of the neighborhood; later, went to school in Suffield, Conn.

His first course in medicine was at Yale Medical College; later, he went to the College of Physicians and Surgeons in New York, where he graduated in 1860.

He began the practice of medicine in Montville, but in 1870 he moved to Norwich, where he has lived for forty-five years.

It was my good fortune to have known Dr. Perkins since 1877. Our first meeting inspired me with respect, which soon ripened into admiration, and this in turn, into friendship, which remained unmarred to the end.

Dr. Perkins possessed a strong personality, but withal, he was gentleness itself in the presence of his patients.

Under an exterior calm and self-poised, there was a large warm heart, more sympathetic than some people imagined. After having known him for years, and having supposed, from his calm and cheerful demeanor, that the cares of the profession rested lightly on his shoulders, I was surprised when he told me one day, how heartsick and depressed he was at times, because of the troubles of his patients. I had not suspected it, but it did me a world of good to hear him tell it.

I had supposed, in my inexperience, that the cares of professional life rested more heavily on me than on him, and that it was a sign of weakness on my part, but to hear a strong man like Dr. Perkins admit the same "weakness" (if you call it such) put a little courage into me, which I have never lost to this day. I wish now, that I had told him what those few words meant to me.

Dr. Perkins was not only a deeply read and accomplished physician, but he cultivated the social side of his nature.

In conversation, he was always interesting. Many a time he took convalescing patients for rides through the country. In that way some of them learned more about birds, flowers, trees and rocks than they ever knew before. Dr. Perkins was interesting to many people, because he was himself so interested in many ways.

As a physician, he was calm, self-reliant and resourceful. His very presence in the sick room must have inspired confidence. If "a merry heart doeth good like a medicine," some of Dr. Perkins' success may have been due to his fund of quiet humor, which was never lacking, under proper conditions.

To see his genial smile and twinkling eyes, when he told of something humorous, was a pleasure enjoyed by many who were not patients.

In the meetings of this Society and of the Norwich Medical Society Dr. Perkins was not a voluminous speaker, but his words were always the words of wisdom, born of the union of study and experience.

Dr. Perkins died in Norwich, August 7th, and is survived by his wife and son, Dr. Charles Perkins of Norwich, and one daughter, Mrs. Frank W. Browning of Montville.

In the death of Dr. Perkins, the medical profession loses an honorable and esteemed member; the community a useful and worthy citizen, and his family a kind and indulgent husband and father.

Henry Martin Rising, M.D., South Glastonbury.

W. S. KINGSBURY, M.D., GLASTONBURY.

Henry Martin Rising was born in Southwick, Mass., on Nov. 20, 1843, his parents being Abram and Hulda (Clarke) Rising. He received his early education in the common schools of Massachusetts, and before entering the Yale School of Medicine in 1866 spent some time in the normal school in Westfield, Mass. He was awarded the Hooker prize in his senior year at Yale.

After taking his degree, in 1868, he commenced practice in Salem, Conn., but in 1870 removed to South Glastonbury, Conn., where he continued in his profession until his retirement about ten years ago, and where he died, after an illness of several years, due to arterial sclerosis and Bright's disease, May 19, 1915. Burial was in the Old Church Cemetery in South Glastonbury.

He was married in Stonington, Conn., Jan. 28, 1868, to Sarah, daughter of Isaac S. and Phoebe P. (Hewitt) Breed, who survives. They had three children: a son, Harry Breed, a graduate of Yale 1895, with the degree of M.D.; Emily Elizabeth, who died in 1905, and Mattie Clada, who died four years after her sister.

Dr. Rising was a member of the Connecticut State Medical Society, and of the Congregational Church in South Glastonbury.

Soon after coming to South Glastonbury, Dr. Rising, by his energy and skill, won the respect of the entire community, which he held in full until his death. Practicing under adverse conditions, with almost none of the modern aids, he showed a great resourcefulness, and was very successful in his work. He was ever kind and patient, a good friend to all his families and beloved by them all.

Albert Joseph Roberts, M.D., Bridgeport.

J. R. TOPPING, M.D., BRIDGEPORT.

"Death loves a shining mark, a signal blow."

In the death of Dr. Albert Joseph Roberts, the Medical Association of Bridgeport, Conn., with the Fairfield County Medical Society, desire to express their sorrow for the death of a prominent surgeon, and in common with the community, mourn his *special* loss.

Those close to him in daily hospital work also recognize a more personal loss in that he was a loyal friend and true.

For hospital and charitable work he freely gave his knowledge and if necessary his means to aid the poor and suffering. He had a very pleasing personality and his knowledge in diagnosis and treatment was so great that he attracted a large following.

"He had kept
The whiteness of his soul and thus men
O'er him wept."

Dr. Roberts was born in Weston, Mass., August 26th, 1874; attended Weston District School from 1880 to 1885, Weston Grammar School, 1885 to 1888, inclusive, and followed with a course in the Boston Latin School. He taught in Gilmanton Academy, New Hampshire, in 1896, and entered Harvard Medical School and graduated in the class of 1902 with honorable mention. He was a popular member of the Boylston Society of Harvard.

Dr. Roberts located in Bridgeport, Conn., after he had served the usual time as interne in the Worcester City Hospital. Dr. Roberts was a member of the City, County and State societies, American Medical Association and The Surgeons of North America; attending surgeon to the Bridgeport Hospital, physician to the Training School for Nurses.

He died suddenly of cerebral hemorrhage at the Bridgeport Hospital, May 11th, 1915, aged forty years.

We watch'd his breathing thro' the night,
His breathing soft and low,
As in his breast the wave of life
Kept heaving to and fro.

Our very hopes belied our fears
Our fears our hopes belied,
We thought him dying when he slept
And sleeping when he died.

Then with no fiery, throbbing pain,
No cold gradations of decay,
Death broke at once the vital chain
And freed his soul the nearest way.

Jay Webber Seaver, M.D., New Haven.

C. J. BARTLETT, M.D., NEW HAVEN.

Dr. Jay Webber Seaver died on May 5, 1915, at Berkeley, Cal., at the age of sixty years. After having spent the winter in Florida, in apparently excellent health, he was on a trip through the south and west, accompanied by his wife, and was sick only a few days. His death was due to some form of heart disease.

Dr. Seaver was a native of Vermont, having been born in Craftsbury, March 9, 1855. He was of English and Scotch ancestry. His early education was obtained in the academy of his native town, and was followed by two years at Williston Seminary at Southampton, Mass., where he prepared for college. He graduated from the Academic Department of Yale in 1880, and then taught for three years, one year in Scranton, Pa., and two years in Williston Seminary, before entering the Yale Medical School, from which he graduated in 1885.

While still a student in the Medical School, Dr. Seaver was an instructor in the Yale Gymnasium, and from that time on he was a student of the problems of physical development and a teacher of exceptional ability in various branches of physical education, a subject in which he was not only an indefatigable worker, and a lecturer and writer, but was recognized as a leading authority. For many years and until 1904 he was officially connected with the Yale Gymnasium, at first as an instructor and for the last twelve years as associate director. At the time of his appointment as associate director in 1892, Yale conferred upon him the degree of M.A. in recognition of his work in Anthropometry. The extensive data which he collected from the measurements and physical examinations of successive generations of Yale students he utilized for his numerous monographs and addresses. The best known of these is probably his Anthropometric Table, which was based upon the records of 2,300 Yale students. For many years he was also connected with the New Haven Normal School of Gymnastics.

One of the notable results of Dr. Seaver's life-work was the development of the Chautauqua School of Physical Education, with which he was connected from 1889 until his death, at first as lecturer but now for many years as its president. This great summer school, gathering pupils as it does from all over the country, gave him a very wide circle of acquaintances. His interest in physical education led him in 1898 to visit Europe, largely to study the system of medical gymnastics in Sweden. He received repeated evidences of the high esteem in which he was held as a physical educator. He had been president of the American Association for the Advancement of Physical Education (1895), of the Society of College Gymnasium Directors (1900), and was in demand as a lecturer on matters pertaining to physical education. Also he served one year as president of the New Haven Medical Association.

Dr. Seaver's more strictly medical work was in general practice, but with particular attention to the use of exercise and the employment of mechanical appliances in the correction of physical deformities. For some years he had had an extensive practice at Chautauqua, N. Y., during the summer months, in addition to his educational duties. He had planned to make this his permanent home and had, in fact, taken up his residence there some months before his death.

He married, July 1, 1886, Leona Nancy (Sheldon) Sullivan of Hartford, Conn., who survives him. Their only daughter, Ruth Buchanan, is the wife of Professor N. J. Lennes of the University of Montana, Missoula, Mont.

The formal outline of the professional work and successes of such a man gives no measure of the man himself. Dr. Seaver's full stature was seen in the personal influence which he exerted upon his associates and his helpfulness to them. He was of a strong personality, democratic, self-sacrificing to a fault, and one to whom dissimulation was absolutely unknown. Above other traits there stands out his perfect honesty with himself and others. He always seemed to be looking for that which was best in his fellow men. His generosity and love for others were evident to all who knew him. He won friends quickly and kept them permanently. His years of work at Yale

and Chautauqua had made for him a host of loyal friends all over the country. As a college instructor it was the poorer students to whom he was particularly kind. Time and again he would take some fellow, sick and discouraged, into his own home where he and his wife cared for and nursed him back to health. He was the type of the physician needed on the staff of every university to look after and give cheer to those who are finding the struggle too hard.

At a large memorial meeting held in his honor at Chautauqua some weeks after Dr. Seaver's death, one of the speakers was a noted Yale athlete of a few years back, Dr. A. H. Sharpe. His words, spoken with no thought of further publicity, simple, direct from the fullness of his heart, express so well what hundreds of others would wish to say, that they may well find a place here in part:—

"I thought it was going to be easy for me to speak of Dr. Seaver because he was so much to me. It is fortunate for a young man to have a friend such as he. He practically directed the course which my life has taken and I have a right to thank him for it. He was the kind of man who would not want to have me talk like this. He never did care for such things. He was so sincere and upright that he did not care for form. He simply loved the human beings that he met, and it was a great thing for me to have him for a friend."

And later, on the same occasion, President George H. Vincent added,

"We talk glibly of the ways in which people's lives are perpetuated. Do we know what that means? The most eloquent speech this afternoon was Dr. Sharpe's, the only speaker representing the group of young men and women, and there have been scores and hundreds of these, whose lives have been touched and affected in the way he was."

From years of close association one feels that he knows a friend intimately, but as I have visited with Dr. Seaver's old neighbors in his native state, talked with Yale men now in middle life, met his friends at Chautauqua, both young and old, from many different states and heard what he had been to them, the truth was borne home that a living force had gone out from this man much greater than I had ever imagined. Such men die, too often as in Dr. Seaver's case untimely, but their deeds live long after them.

William J. Sheehan, M.D., New Haven.

WILLIAM F. VERDI, M.D., NEW HAVEN.

William J. Sheehan, M.D., died on Wednesday morning, January 13, 1915, at St. Raphael's Hospital, of septic pneumonia. He had been ill about three weeks. His illness started Christmas Eve, December 24, 1914, with a sore throat, from which a pure culture of streptococci was obtained. In a few days a general streptococcemia developed. On December 29th there developed an arthritis in his left ankle and an arthrotomy was performed January 6th. Streptococci were obtained, in pure culture, from the effusion in his ankle. On January 10th pneumonia developed and was the immediate cause of his death.

Doctor Sheehan was in his 44th year. He was born in Easthampton, Mass., and was the son of the late William J. and Elizabeth O'Donnell Sheehan. He was educated in the public schools of his native town and in the Manhattan College, New York, from which institution he graduated in 1892. He then entered the Yale Medical School and graduated with the class of 1895. After his graduation he entered the New Haven Hospital and gave sixteen months of service there. Four months he spent in service in the Rotunda Hospital in Dublin, Ireland. Upon his return to New Haven in 1897 he commenced the practice of medicine. At different periods he made trips to Vienna and to Berlin for study. During his term in the medical school, Doctor Sheehan was a member of the Yale Glee Club and was connected with that organization for three years. He possessed a rich tenor voice, which brought him into much prominence in musical affairs at Yale University during his course in the medical school.

When the matter of a new hospital was under discussion in 1906 and 1907, Doctor Sheehan was one of the foremost leaders in the movement and it was much through his interest and activity that the Hospital of St. Raphael was established in New Haven.

He, with others interested in this project, saw the realization of their hopes and for all times he was one of the men who gave their time and interest unstintedly to this institution. At the time of his death and for a long period prior, he was attending surgeon at this hospital. His counsel on matters relating to this institution was much sought and his death is felt as a great loss.

Doctor Sheehan was a member of the Knights of St. Patrick, being an ex-president of that society. He was also a member of the Graduates Club, the New Haven Country Club, the Quinnciac Club, Roderigo Council, Knights of Columbus, the Knights of Columbus Club and of the Schlaraffia, Novo Portu.

Doctor Sheehan married on June 30, 1913, Miss Lillian Molloy of West Haven, Conn., who with one son, William J. Sheehan, survive. Doctor Sheehan also leaves two brothers, Edward A., and Francis W. Sheehan, a graduate of Yale, 1898, and 1901 L.; and three sisters: Anna, Elizabeth and Mrs. Edward P. O'Meara, his stepmother, Mrs. William J. Sheehan, and a stepsister, Regina Sheehan.

To Doctor Sheehan's rank as a prince in the realm of brotherhood many men bear testimony, but his fellows in the profession where he had truly found his work know best the severity of the loss of his passing. His fine mind had devoted all its force to the knowledge of his profession and its practice. His hand was surpassing in skill. It was his sublime human sympathy that was his greatest attribute as a physician. Unselfish service was his guiding motive. His love of humanity consecrated all his powers and made him a master, in a high degree of human possibility, of the forces which heal disease. So rare a combination of spirit and skill, so fine an example of that which exalts the profession of ministering to human ills, cannot pass from earth without leaving a lasting sense of loss. The memory of his spirit in his work will live long as an uplifting tradition to those who carry on his work in this community and vicinity.

No monument is needed;
He lives in hearts of all.
Our dust shall be his witness
When we have heard the call.

Andrew Jackson Smith, M.D., Bridgeport.

SAMUEL M. GARLICK, M.D., BRIDGEPORT.

Andrew Jackson Smith, the subject of this sketch, was born the sixth day of October, 1838, in the town of New Canaan of this state, and died the twentieth day of December, 1914, at the age of seventy-six years, two months and fourteen days, having faithfully practiced his profession more than a full half-century. His parents were of old New England stock, of English extraction, his mother being Maria Holley of Stamford, Conn.

Dr. Smith's father was a successful farmer in Pound Ridge, N. Y., a village about six miles from the western line of Connecticut, where young Andrew grew up and attended the country school. His academic education was continued by an extended course in Bedford Academy, a school of some reputation and distant about six miles from his boyhood home. After completing his course there, Smith, like many of the young men of that time, taught school for one or two years in Long Ridge, a village in the town of New Canaan, where he was born. He thus rounded out his education, acquired an independence of thought, a self reliance and the power of definitely imparting his ideas, in a way which can be obtained in no other manner so well as it can be by teaching. Andrew Jackson was a prepossessing lad, fond of study and always the gentleman. His two older brothers had entered mercantile pursuits, but it was decided that Andrew's tastes and habit of thought were not adapted to those callings.

At about the age of twenty-one he deliberately made choice of medicine and, going to New York City, entered upon the study of the same, making his home while there with his brother Samuel. His professional course was taken under the preceptorship of Dr. Gordon Buck, whose office he entered as a student the 8th of April, 1859, and "continued without interruption to pursue the same with zeal and diligence." He was graduated

in medicine from the Medical and Surgical College of Columbia University, on the 12th day of May, 1863.

The high esteem in which the young man was held by his associates and fellow townsmen is abundantly shown in the certificates, still extant, given by his pastor, Rev. William Patterson of Pound Ridge, and by Dr. Gordon Buck, his preceptor.

Dr. Smith's graduation occurred while the country was in the terrible throes of civil war; an ardent patriot, he at once offered his service to his country. His first appointment took him on a voyage to Vera Cruz and he would have continued longer in that service had he not yielded to the persuasive entreaties of his mother, for whom he had an exceedingly warm affection. Declining further service in the navy, Dr. Smith at once entered the army, being appointed Acting Assistant Surgeon and assigned to duty at DeCamp General Hospital, Fort Schuyler, N. Y. As assistant to the late Dr. Robert Bartholow he continued in this service for rather more than two years. Of his excellent work in the Army Hospital there is still extant abundant satisfactory evidence; nevertheless surgery was not to his temperament or liking and his future years were devoted largely to general family practice, including obstetrics, for which he appears to have had an especial aptitude and in which he was unusually successful.

Very soon after being "mustered out of service," Dr. Smith came to Bridgeport, where he was already personally known and had a number of friends and an elder brother, Isaac, resident and employed in commercial pursuits. Here he continued in family practice until the time of his death, a useful period of over forty-eight years, beloved by his patients, trusted by his friends, esteemed in the church and honored by the community.

Although a man of quiet demeanor, Dr. Smith's affections were deep, his love of home was intense, his interests varied and many. He was especially fond of flowers; at one time gave particular attention to the varied forms of sea-weed found along our shores; was frequently interested in and enjoyed long walks in the country-side and in woodlands hereabout, with his long-time friend, the late Isaac Holden. Although so frankly democratic in name, Dr. Smith was always an earnest Republican

in politics. It is not recorded that he ever aspired to or held any political office.

Although not a member of the church, Dr. Smith was instinctively a religious man and earnestly affiliated himself with all those interests which make for righteousness in a community. He was the trusted and honored clerk of the Ecclesiastical Society of the Park Street Congregational Church from the time of its organization to the time of his death, a period of almost forty-six years.

The Mechanics and Farmers Savings Bank of this city was organized in Dr. Smith's private office in 1873, and until the time of his decease he continued one of the trustees of the same, constant in attendance and faithfully interested in its usefulness.

On the 12th of June, the month of brides, 1889, Dr. Smith married Jennie B. Andrus, daughter of Erskine and Jane (Barnes) Andrus of this city, formerly of Plainville, Conn.

His final illness was one of slow accession and insidious onset. He was confined to bed with great suffering for more than eleven weeks; was interested in his patients and in his profession to the last of his responsive intelligence. Of him, the oldest continuous member of our society, we may add these words,—

No higher, holier gift than thine,
To mortal frail, is given,
To heal the ills of fallen man,
A gift of highest heaven.

Oliver Cotton Smith, M.D.

WALTER RALPH STEINER, M.D.

"Fallen like autumn's falling leaf
Ere yet his summer's noon was past,
Our friend, our guide, our trusted chief,—
What words can match a woe so vast?"

These lines written by a brother physician on the death of a martyr president reëcho in our hearts to-day, for there is a peculiar pathos to this occasion. One year ago, after this society had bestowed its highest office upon Dr. Oliver Cotton Smith, we were looking forward with keenest anticipation to his Presidential address, at that time. We were mindful then of the clear English diction which had so often charmingly expressed his thoughts, on other occasions, and expected that what he would say to-day would be his crowning achievement. In the midst of these hopes, he was taken away from us, entering into that within the veil as bravely and fearlessly as any one who, knowingly, had ever faced death before. It is proper, consequently, at this time, to speak briefly of his life spent in going about doing good, for we have to-day the mystery of his presence around and about us, counseling harmony and peace, and inspiring each one of us to give the best that is in us to our profession.

Oliver Cotton Smith was born in Hartford on November 29, 1859. He was the oldest son of William B. and Virginia (Thrall) Smith. His education was obtained at the West Middle School, the Hartford High School and the Hannum Business College. Compelled by lack of means to forego a college course, he was encouraged by Dr. James H. Waterman, after a serious illness, to study medicine, and shortly thereafter entered that doctor's office in Westfield, Massachusetts, where he remained eighteen months. In 1880 he matriculated at the Long Island Hospital College, where after a course of three years he was graduated with honors, standing third in a class of eighty members. While

there he was elected by his class to the presidency, and received the Atkinson prize. He also served as ambulance surgeon to the Brooklyn Board of Health during his second year and as substitute interne on the staff of the Long Island Hospital College. In 1881, during his vacation he acted as Surgeon to the steamship *City of Para*, which ran to Rio Janeiro. In 1884 he began the practice of medicine in Hartford in the office of the late Dr. Jonathan S. Curtis. Two years later he married Miss Claribel Waterman, a daughter of his preceptor. He soon won the confidence and trust of many patients. A large lucrative and absorbing practice became his reward for the thoughtfulness and care he showed in his professional relations with every individual with whom he came in contact. His predilections, however, were always more towards surgery, so he gradually limited his work to that specialty and, as you all know, was one of the most eminent surgeons in Connecticut at the time of his death.

Upon the opening of St. Francis Hospital in 1897, he was made a member of the surgical staff, his official title being visiting surgeon. Two years later he became an assistant visiting surgeon at the Hartford Hospital and in 1905 was raised to the rank of visiting surgeon. Besides these positions he was consulting surgeon at the Litchfield County Hospital, the Middlesex County Hospital, the New Britain Hospital, and the Johnson Memorial Hospital at Stafford Springs. He also belonged to many societies, social and medical, being a member of the Hartford Medical Society, the Hartford County Medical Association, the Connecticut State Medical Society, the American Medical Association and the Association of Military Surgeons. On the establishment of the American College of Surgeons, he became a Fellow and was actively interested in its advancement at the time of his death. On May 21st, 1914, he was elected to the Presidency of the Connecticut State Medical Society and a month later was granted the honorary degree of Master of Arts by Yale University.

For two years he faced death with a fortitude which merits our admiration and respect. An inoperable growth was slowly

sapping his strength away, but he kept at work, never complaining of his symptoms, until he could go about no more. Then returning to his home, he put his house in order and calmly awaited death, as for the setting sun. His work was finished, but in the twilight he found comfort in the visits of his friends. They brought cheer to him and he gave to them a matchless example of how each one should die. Thrilled by his unselfishness while living, we were more deeply moved by his heroism in the face of death.

"So be my passing
My task accomplished and the long day done,
My wages taken, and in my heart
Some late lark singing,
Let me be gathered to the quiet west,
The sundown splendid and serene,
Death."

BIBLIOGRAPHY.

Treatment of urethral stricture by electrolysis. *Proc. Conn. M. Soc.*, 1888, n. s. iv, 100-108.

The early treatment of congenital deformities. *Proc. Conn. Med. Soc.*, 1892, 343-349.

Use of diphtheria antitoxin; county report. *Proc. Conn. M. Soc.*, 1898, cvi, 195-199.

Smallpox and vaccination. (Read before Hartford Medical Society, Jan. 28, 1901. Privately printed.)

Treatment of prostatic hypertrophy. *Yale M. J.*, 1903, ix, 213-230.

Accessory thyroid on the posterior third of the tongue. *N. York M. J.*, 1904, lxxx, 818-820.

Abdominal crises caused by Meckel's diverticulum; report of two recent cases, with a review of the literature upon the subject. *Am. Surg.*, 1904, xl, 742-747.

A new tenaculum forceps. *J. Am. M. Ass.*, 1904, xliii, 1395.

Indication for bladder drainage by the perineal route. *Am. J. Surg. & Gynec.*, 1904-5, xviii, 55.

Two cases of Henoch's purpura; with remarks upon the gastro intestinal lesion. *Med. Rec.*, 1904, lxvi, 890-892.

Work of the Mayos. (Read at semi-annual meeting of the Hartford County Medical Association, Oct. 18, 1905. Privately printed.)

Diagnosis of surgical diseases of the kidney and ureter. *Tr. Conn. State M. Soc.*, 1905, 357-378.

Dangers of delay in acute abdominal lesions. *Yale M. J.*, 1904-05, xi, 237-251.

Indications for bladder drainage by the perineal route. *Am. J. Urol.*, 1904-05, i, 230-235.

Further report on the surgical treatment of the enlarged prostate gland. *Med. Age*, 1905, xxiii, 841-849.

Diagnosis of surgical diseases of the kidney and ureter. *N. Eng. M. Month.*, 1906, xxv, 10-20.

History of prostatic surgery in Connecticut. *Am. J. Urol.*, 1905-6, ii, 201-211.

Nephro-lithotomy from the standpoint of the provincial surgeon. *Amer. J. Urol.*, 1905-06, ii, 241-244.

Advanced age as a contra-indication to operation. *Med. Rec.*, 1907, lxxii, 642-644.

Tumors of the caecum. *Tr. Conn. State M. Soc.*, 1907, 227-250.

Notes on European surgical clinics. *N. York M. J.*, 1908, lxxxvii, 203-206.

Intestinal intussusception complicating typhoid fever; report of a case of intestinal intussusception with mesenteric thrombi occurring during first week of typhoid fever. *Am. Surg.*, 1909, xlix, 111-114.

Neoplasms of the penis, scrotum, testicle and cord. *Boston M. & S. J.*, 1909, clxi, 538-593.

Atresia of the vagina; with report of a case complicated by hemato trachelos: operation. (With Waterman, P. H.) *Med. Rec.*, 1909, lxxvi, 10-14.

Surgical aspect of the abnormally mobile kidney. *Am. J. Urol.*, 1910, vi, 332-340.

The Residual Appendix. *Med. Rec.*, 1910, lxxviii, 619-622.

Suppurative lesions of the kidney and ureter. *Boston M. & S. J.*, clxvii, 12-16.

Symposium: on suppurations of the urinary tract. (With Terry, H., and Pitts, H. C.) *Boston M. & S. J.*, 1912, clxvii, 7-16.

Four kidney specimens (tuberculosis 3, stone 1). *Boston M. & S. J.*, 1912, clxvii, 20.

Conclusions drawn from one hundred prostatectomies. *Tr. Am. Urol. Ass.*, 1912, vi, 125-132.

Surgical treatment of goitre. *Tr. Conn. State M. Soc.*, 1912, 244-270.

Bilateral nephrolithiasis. *Med. Rec.*, 1913, lxxxiii, 1006-1008.

Bilateral nephrolithiasis. *N. York M. J.*, 1913, xcvi, 1282-1285.

Hygroma cysticum colli and hygroma axillare. *J. Am. M. Ass.*, 1914, lxii, 522-523.

Needle protruding through wall of stomach. *Med. Rec.*, 1914, lxxxv, 1064.

Bilateral sarcoma of undescended testes. *Boston M. & S. J.*, 1914, clxx, 839-840.

Differential diagnosis and indications for treatment of tumors of the neck. *Boston M. & S. J.*, 1915, clxxii, 208-217.

Nathaniel Eugene Wordin, M.D., Bridgeport.

HENRY S. MILES, M.D., BRIDGEPORT.

Doctor Nathaniel Eugene Wordin died at his home in Bridgeport, on May 10th, 1915, following a cerebral hemorrhage which had occurred three weeks previously.

Doctor Wordin was born in Bridgeport on May 26th, 1844, the son of Nathaniel Sherwood Wordin, a druggist of that city, and Fanny Augusta (Leavenworth) Wordin, being a descendant of Thomas Cooke, who settled in New Haven Colony in 1639.

His mother was the daughter of Dr. Frederick Leavenworth, who studied medicine with Dr. Isaac Baldwin of Waterbury and practiced there for several years. Through her he was also descended from Dr. Samuel Johnson, who, in 1754, became the first president of King's College (now Columbia University).

The doctor's preparatory training was received at the Golden Hill Institute and Wilbraham Academy. When eighteen years of age he joined the Sixth Connecticut Volunteers and served throughout the Civil War.

After his return to Bridgeport he entered Yale College, from which he graduated as A.B. in 1870, receiving the degree of M.A. from that institution in 1874, having in the meantime studied one season at Yale Medical School and two years at Jefferson Medical College, where he graduated in 1873.

Three years later he formed a partnership with Dr. Robert Lauder, which he continued until 1879; except for a brief period, when he went to Philadelphia to take a special course of study on the eye, with the intention of accepting an appointment on the staff of the medical college at Aintab, Turkey, a plan which he shortly abandoned. He then followed his profession independently, in Bridgeport, to within a short time before his death.

The list of positions which he filled most honorably in the field of medicine is a long one. Dr. Wordin was one of the most

valued members of the Bridgeport Medical Association, doing long and faithful service as secretary, president and committee-man.

He moreover wrote and read many most instructive papers for this society. His discussions were always ready, free and to the point, and this, our county society, usually found him present at its meetings, performing every task assigned him with painstaking care. He served as our president for one year.

In 1888, he was elected secretary of the State Medical Association and served continuously for sixteen years. It was probably in this capacity that the doctor labored hardest to advance the cause of medicine in the state.

He gained a wide reputation for his exact and thorough manner in conducting our state meetings and the accuracy and promptness shown in issuing our annual volume of proceedings. He edited the report of the centennial meeting, a book of more than a thousand pages, altogether a great service, for which we must ever be thankful.

The doctor was made president of the Connecticut Medical Association in 1905 as a mark of appreciation of his worth.

In 1890 he was appointed a member of the State Board of Health, upon which he served constantly until 1899. He was one of the early surgeons of the Bridgeport Hospital Staff, doing good and faithful service for many years.

He was physician in charge of the Bridgeport Orphan Asylum. Besides his membership in the local medical societies he belonged to the American Academy of Medicine and the American Public Health Association.

It will be sufficient here to merely mention some of his other numerous affiliations. He was an ardent and active member of the First Congregational Church, a member of the Elias Howe, Jr., Post, G.A.R., the United Order of the Golden Cross, the Sons of the American Revolution, the Fairfield County Historical Society, etc.

Dr. Wordin was not only a ready and willing contributor of papers to the medical societies but wrote many helpful articles on public health and hygiene which were presented to such asso-

ciations as the Board of Trade and the Bridgeport Scientific Society, and later published in the daily papers, that the hints and advice contained therein might have a wider circulation.

A few of the titles are: "The Adulteration of Food," "The Duty of Public Disinfection following Acute Infectious Diseases," "A Plea for the Domestic Disposal of Garbage," "Opsonins" and "Tuberculosis."

Always active for the city's good, he devoted himself largely to the uplift of its citizens.

Personally, he was honor itself, and the most loyal of friends.

He was married December 25th, 1879, to Miss Eliza Woodruff, daughter of Julius Steele Barnes, M.D., of Southington. Their only child, Laura Barnes Wordin, died in 1913.

MEMBERS OF THE
CONNECTICUT STATE MEDICAL
SOCIETY.

· /

·

MEMBERS OF THE SOCIETY.

HONORARY MEMBERS.

THOMAS ADDIS EMMETT.....	New York City, N. Y.
WILLIAM HENRY WELCH.....	Baltimore, Md.
ROBERT FULTON WEIR.....	New York City, N. Y.
HON. CHARLES E. GROSS.....	Hartford, Conn.
DAVID WEBSTER.....	New York City, N. Y.
SIR JAMES GRANT.....	Ottawa, Canada.
HENRY O. MARCY.....	Boston, Mass.
T. MITCHELL PRUDDEN.....	New York City, N. Y.
WILLIAM W. KEEN.....	Philadelphia, Penn.
J. W. S. GOULEY.....	New York City, N. Y.
REYNOLD WEBB WILCOX.....	New York City, N. Y.
WILLIAM OSLER.....	Oxford, England.
WILLIAM C. GORGAS.....	Washington, D. C.

ACTIVE MEMBERS.

The Names of those who have been Presidents of the
State Society are in Capitals.

HARTFORD COUNTY.

CHARLES C. BEACH, M.D., Hartford, *President*.
EDWARD G. FOX, M.D., Wethersfield, *Vice President*.
ALBERT R. KEITH, M.D., Hartford, *Secretary*.
Councilor—WALTER R. STEINER, M.D., Hartford.
Censors—GEORGE N. BELL, M.D., GEORGE H. BODLEY, M.D.,
WILLIAM R. MILLER, M.D.

Annual Meeting, First Tuesday in April; Semi-Annual Meeting,
Fourth Tuesday in October.

Hartford:

David Crary	926 Main Street.
William W. Knight.....	254 Trumbull Street.
Thomas D. Crothers.....	142 Fairfield Avenue.
Ellen H. Gladwin.....	705 Asylum Avenue.
Frederick S. Crossfield.....	75 Pratt Street.
William D. Morgan.....	49 Pearl Street.
John F. Axtelle.....	635 Main Street.
George K. Welch	26 State Street.
Phineas H. Ingalls.....	49 Pearl Street.
Edward K. Root.....	49 Pearl Street.
John Howard.....	1337 Main Street.
Charles D. Alton.....	75 Pratt Street.
Joseph E. Root.....	67 Pearl Street.
William Porter, Jr.....	179 Allyn Street.
Frederick T. Simpson.....	122 High Street.
George R. Miller.....	51 Church Street.
Charles C. Beach.....	125 Trumbull Street.
Gideon C. Segur.....	67 Farmington Avenue.
Alva E. Abrams.....	36 Pearl Street.
Charles E. Taft.....	98 High Street.
Thomas F. Kane.....	517 Main Street.
Arthur J. Wolff.....	904 Main Street.

Ansel G. Cook.....	179	Allyn Street.
Edwin A. Down.....	902	Main Street.
Daniel F. Sullivan.....	64	Church Street.
EVERETT J. McKNIGHT.....	110	High Street.
Benjamin S. Barrows.....	164	High Street.
Michael A. Bailey.....	434	Main Street.
George N. Bell.....	44	High Street.
Frank L. Waite.....	68	Pratt Street.
Charles S. Stern.....	75	Pratt Street.
Franklin L. Lawton.....	295	Main Street.
John H. Rose.....	75	Pratt Street.
John B. Waters.....	281	Trumbull Street.
Joseph B. Hall.....	36	Pearl Street.
Edward O. Elmer.....	805	Park Street.
Janet M. Weir.....	282	Sigourney Street.
John F. Dowling.....	1315	Main Street.
Philip D. Bunce.....	98	High Street.
Wilton E. Dickerman.....	125	Trumbull Street.
John B. Boucher.....	25	Charter Oak Avenue.
Levi B. Cochran.....	50	Farmington Avenue.
James H. Naylor.....	1	Main Street.
Charles P. Botsford.....	219	Collins Street.
James H. Standish.....	479	Albany Avenue.
Michael H. Gill.....	36	Pearl Street.
John B. McCook.....	390	Main Street.
John W. Felty.....	902	Main Street.
Thomas W. Chester.....	110	High Street.
Joseph A. Kilbourn.....	271	Park Street.
Thomas B. Enders.....	3	Highland Street.
Charles A. Goodrich.....	5	Haynes Street.
Alfred M. Rowley.....	53	Main Street.
Irving DeL. Blanchard.....		
Emil G. Reinert.....	109	Ann Street.
Frederick L. McKee.....	68	Pratt Street.
Edward R. Lampson.....	125	Trumbull Street.
E. Terry Smith.....	70	Cone Street.
William H. FitzGerald.....	904	Main Street.
Emma J. Thompson.....	287	Trumbull Street.
Patrick J. Ryan.....	316	Park Street.
Walter R. Steiner.....	4	Trinity Street.
Ellen P. O'Flaherty.....	140	Main Street.
C. Brewster Brainard.....	98	High Street.
Eckley R. Storrs.....	179	Allyn Street.
Ernest A. Wells.....	2	Garden Street.

William H. Van Strander.....	61 Church Street.
James H. Conklin.....	89 Pratt Street.
Orin R. Witter.....	44 High Street.
Frederick B. Willard.....	80 Church Street.
Henry E. Adams.....	194 High Street.
William T. Owens.....	703 Main Street.
John C. Pierson.....	50 Windsor Avenue.
Henry F. Stoll.....	75 Pratt Street.
Paul P. Swett.....	803 Main Street.
Mark S. Bradley.....	36 Pearl Street.
Harry C. Clifton.....	98 High Street.
Robert S. Starr.....	75 Pratt Street.
Arthur C. Heublein.....	42 High Street.
Whitefield N. Thompson.....	30 Washington Street.
Maude W. Taylor.....	107 Edwards Street.
James J. Boucher.....	429 Capitol Avenue.
Isaac W. Kingsbury.....	36 Pearl Street.
Edward J. Turbert.....	18 New Park Avenue.
Patrick F. McPartland.....	1341 Main Street.
Thomas F. Welch.....	356 Windsor Avenue.
James C. Wilson.....	164 High Street.
Robert L. Rowley.....	49 Pearl Street.
Horace C. Swan.....	11 Lincoln Street.
Otto G. Wiedman.....	377 Albany Avenue.
Thomas N. Hepburn.....	42 High Street.
Henry A. Martelle.....	112 High Street.
Charles T. Beach.....	686 Main Street.
Edward H. Blair.....	Dillon Court Hotel.
James W. Ward.....	437 Capitol Avenue.
George F. Vail.....	36 Pearl Street.
Clarence M. Hatheway.....	110 High Street.
Albert R. Keith.....	43 Farmington Avenue.
Joseph P. Ryan.....	44 Church Street.
Arthur H. Griswold.....	42 Church Street.
David J. Molumphy.....	517 Main Street.
Morris Tuch.....	1333 Main Street.
John B. Griggs.....	44 High Street.
Andrew M. Outerson.....	104 Church Street.
Charles H. Borden.....	36 Pearl Street.
James F. Rooney.....	308 Park Street.
Henry Bickford.....	111 Ann Street.
Paul Waterman.....	44 High Street.
William B. Bartlett.....	42 High Street.
Howard B. Haylett.....	158 High Street.

Domenico DeBonis.....	94	Windsor Avenue.
Calvin Weidner.....	49	Pearl Street.
Jeremiah E. McSweeney.....	6	Wethersfield Avenue.
John C. Rowley.....	50	Farmington Avenue.
William E. McClellan.....	125	Trumbull Street.
Henry C. Russ.....	114	Woodland Street.
Dwight W. Tracey.....	5	Wethersfield Avenue.
Albert E. Cobb.....	1	Spring Street.
Abraham Fischer.....	149	Windsor Avenue.
Walter G. Murphy.....	275	Farmington Avenue.
Richard J. Dwyer.....	186	Franklin Avenue.
Howard W. Brayton.....	44	High Street.
Henry G. Jarvis.....	98	High Street.
Phillip T. Kennedy.....	64	Ann Street.
Robert M. Yergason.....	902	Main Street.
Leon I. Madden.....	36	Pearl Street.
Amos T. Harrington.....	17	Russ Street.
Julius L. Birdsong.....	110	High Street.
Michael J. Morrissey.....	18	Asylum Street.
Frank J. Ronayne.....	66	Church Street.
Edward J. Whalen.....	904	Main Street.
Neil H. Bailey.....	248	Laurel Street.
Robert J. Boyle.....	332	Franklin Street.
James H. Biram.....	98	High Street.
Eliot S. Cogswell.....	122	High Street.
Henry N. Costello.....	61	Belden Street.
William H. Crowley.....	15	Charter Oak Avenue.
Claude V. Flaherty.....	305	Park Street.
Charles E. Jones, Jr.....	98	High Street.
Arthur B. Landry.....	76½	Church Street.
William F. Reardon.....	803	Main Street.
Charles W. Daly.....	381	Capitol Avenue.
Edward A. Deming.....		Asylum and Spring Streets.
F. Arthur Emmett.....	1295	Main Street.
Charles V. English.....		
Daniel Cantarow.....	73	Windsor Avenue.
Clinton D. Deming.....	29	Wethersfield Avenue.
William F. Meagher.....	75	Francis Avenue.
Joseph E. Strobel.....		
John H. T. Sweet.....	71	Church Street.
Robert L. Waite.....	68	Pratt Street.
Earl B. Carter.....	631	Albany Avenue.
Calvin H. Elliott.....	137	High Street.
Harry L. F. Locke.....		

Avon:

Vernon H. C. Morse.

Berlin—EAST BERLIN:

Thomas C. Hodgson.

KENSINGTON:

Roger M. Griswold.

Matthew H. Griswold.

Bloomfield:

Thomas H. Denne.

Bristol:

Arthur S. Brackett.

Benedict N. Whipple.

William W. Horton.

Canton—COLLINSVILLE:

George F. Lewis.

Ralph B. Cox.

George W. Eddy.

S. S. S. Campbell.

East Hartford:

Thomas S. O'Connell.

Franklin H. Mayberry.

Edward H. Truex.

East Windsor—BROAD BROOK:

Howard O. Allen.

Harold S. Backus.

Enfield—THOMPSONVILLE:

George T. Finch.

Henry G. Varno.

Michael J. Dowd.

John L. Bridge.

Thomas G. Alcorn.

HAZARDVILLE:

Simon W. Houghton.

Farmington:

Stuart E. Phelps.

UNIONVILLE:

William T. Morrissey.

Glastonbury:

William S. Kingsbury.

SOUTH GLASTONBURY:

Harry B. Rising.

Granby:

Vincent J. Irwin, Jr.

Manchester:

Harry R. Sharpe.

SOUTH MANCHESTER:

Thomas H. Weldon.

William S. Gillam.

Noah A. Burr.

Thomas G. Sloan.

George W. May.

William R. Tinker.

Richard W. Rice.

New Britain:

George Clary.

Erastus P. Swasey.

Michael J. Coholan.

Robert M. Clark.

Hermann Strosser.

Kenneth E. Kellogg.

Thomas E. Reeks.

Ernst T. Fromen.

Catherine H. Travis.

Theodore G. Wright.

Maurice W. Maloney.

John Purney.

George H. Bodley.

Samuel W. Irving.

Joseph H. Potts.

Arvid Anderson.

Charles L. Gillin.

Clifton N. Cooley.

Charles A. Gillin.

Henry T. Bray.

George W. Dunn.

Percy W. Fox.

Gertrude J. Kinsella.
Frank Zwich.

Plainville:

John N. Bull.

Rocky Hill:

Oran A. Moser.
Julius E. Griswold.

Simsbury:

John P. Carver.

TARIFFVILLE:

Charles M. Wooster.

Southington:

Willard G. Steadman.
William R. Miller.

Suffield:

Joseph A. Gibbs.
Arthur P. Noyes.

WEST SUFFIELD:

William E. Caldwell.
William Levy.

West Hartford:

Charles O. Purinton.
Edwin B. Lyon.
Ralph W. E. Alcott.
Henry A. Deane.

Wethersfield:

Edward G. Fox.
Arthur W. Howard.

Windsor:

Howard F. King.

Windsor Locks:

Joseph A. Coogan.
William J. Coyle.
Myron P. Robinson.
Richard A. Outerson.
Anna E. Coyle.

Total Number, 234

NEW HAVEN COUNTY.

WILLIAM F. VERDI, M.D., New Haven, *President*

FREDERICK G. GRAVES, M.D., Waterbury, *Vice President*

WILLIS E. HARTSHORN, M.D., New Haven, *Secretary*.

Councilor—WILLIAM H. CARMALT, M.D., New Haven.

Censors—WILLIAM F. VERDI, M.D., MICHAEL J. LAWLOR, M.D.,
THOMAS M. BULL, M.D.

Annual Meeting, Third Thursday in April; Semi-Annual, Third
Thursday in October.

New Haven:

Frederick Bellosa.....125 Sherman Avenue.
WILLIAM H. CARMALT.....261 St. Ronan Street.
T. H. Russell.....137 Elm Street.
F. H. Whittemore.....69 Elm Street.

C. P. Lindsley.....	59	College Street.
Henry Fleischner.....	928	Grand Avenue.
MAX MAILHOUSE.....	105	Elm Street.
M. C. O'Connor.....	882	State Street.
C. E. Park.....	42	Elm Street.
Gustavus Eliot.....	209	Church Street.
J. E. Stetson.....		Union League Club.
J. F. Luby.....	1210	Chapel Street.
W. W. Hawkes.....	31	High Street.
F. H. Wheeler.....	27	Perkins Street.
B. L. Lambert.....	578	Howard Avenue.
F. W. Wright.....	48	Pearl Street.
O. T. Osborne.....	252	York Street.
L. C. Peckham.....	141	Greene Street.
L. S. DeForest.....	335	Orange Street.
Henry L. Swain.....	232	York Street.
Mary B. Moody.....		Sherland Avenue.
G. F. Converse.....	1	Whalley Avenue.
J. H. Townsend.....	62	Trumbull Street.
C. J. Foote.....	26	Elm Street.
STEPHEN J. MAHER.....	212	Orange Street.
Louis B. Bishop.....	356	Orange Street.
H. W. Ring.....	185	Church Street.
W. C. Welch.....	59	College Street.
A. O. Baribault.....	209	Chapel Street.
Rollin McNeil.....	149	Bradley Street.
E. M. McCabe.....	287	Orange Street.
James M. Reilly.....	337	Cedar Street.
C. E. Skinner.....	67	York Square.
B. Austin Cheney.....	59	College Street.
Charles A. Tuttle.....	196	York Street.
H. B. Ferris.....	395	St. Ronan Street.
Leonard W. Bacon.....	113	Whitney Avenue.
P. S. Robinson.....	164	Grand Avenue.
Arthur N. Alling.....	257	Church Street.
R. A. McDonnell.....	1142	Chapel Street.
E. P. Pitman.....	52	Sylvan Avenue.
Isaac N. Porter.....	198	Dixwell Avenue.
E. H. Arnold.....	46	York Square.
Robert E. Peck.....		Elm City Private Hospital.
William C. Wurtenberg.....	28	Elm Street.
F. N. Sperry.....	59	College Street.
W. F. Verdi.....	13	Elm Street.
C. J. Bartlett.....	150	York Street.

M. D. Slattery.....	566	Howard Avenue.
W. H. Sanford.....	650	Orange Street.
Leonard C. Sanford.....	347	Temple Street.
Willis H. Crowe.....	106	Whalley Avenue.
C. H. Robbins.....	326	Grand Avenue.
L. M. Gompertz.....	1195	Chapel Street.
Alfred G. Nadler.....	377	Orange Street.
Frederick C. Bishop.....	1241	Chapel Street.
James H. J. Flynn.....	840	Howard Avenue.
Frank A. Kirby.....	355	Whalley Avenue.
John F. Sullivan.....	205	Blatchley Avenue.
Edward F. McIntosh.....	220	Park Street.
Nicola Mariani.....	119	Greene Street.
James S. Maher.....	215	Orange Street.
A. W. Marsh.....	1012	Whalley Avenue.
W. N. Winne.....	1020	Whalley Avenue.
William S. Barnes.....	193	York Street.
Clarence L. Kilbourn.....	202	Blatchley Avenue.
Henry H. Smith.....	43	Elm Street.
Julia E. Teele.....	206	Hamilton Street.
Harry L. Welch.....	94	College Street.
Thomas V. Hynes.....	1441	Chapel Street.
H. M. Steele.....	226	Church Street.
Willis E. Hartshorn.....	1138	Chapel Street.
Richard F. Rand.....	246	Church Street.
Edward S. Moulton.....	237	York Street.
Timothy F. Cohane.....	530	Howard Avenue.
W. J. Butler.....	712	Howard Avenue.
Louis A. Notkins.....	700	Howard Avenue.
Francis H. Reilly.....	286	Columbus Avenue.
Nelson A. Ludington.....	1252	Chapel Street.
D. M. Lewis.....	36	High Street.
Seymour L. Spier.....	348	Crown Street.
William H. Bean.....	40	Pleasant Street.
E. Reed Whittemore.....	69	Elm Street.
Alice P. Ford.....	1400	Chapel Street.
Frank B. Standish.....	310	Elm Street.
Carl W. Henze.....	466	Orange Street.
Eugene M. Blake.....	55	Trumbull Street.
George Blumer.....	64	Trumbull Street.
Samuel M. Hammond.....	185	Church Street.
Archibald C. Herbert.....	256	McKinley Avenue.
Mary P. Dole.....	15	Elm Street.
Treby W. Lyon.....	1210	Dixwell Avenue.

Frederick P. Lane.....	524	Chapel Street.
Harold S. Arnold.....	122	College Street.
Allen R. Diefendorf.....	129	Church Street.
William J. Barrett.....	63	Olive Street.
Herman P. Hessler.....	323	George Street.
Millard F. Allen.....	65	Dixwell Avenue.
Frederick G. Beck.....	199	York Street.
Raynham Townshend.....	233	Church Street.
Jeremiah J. Cohane.....	59	College Street.
Frank L. Phillips.....	413	Temple Street.
Charles Fitzgerald.....	220	Orange Street.
Charles E. Sanford.....	150	Shelton Avenue.
John A. Murphy.....	28	Edwards Street.
James F. Rogers.....	378	George Street.
Wilder Tileston.....	424	Temple Street.
Marvin M. Scarbrough.....	105	College Street.
Joseph I. Linde.....	163	York Street.
Jeremiah B. Sullivan.....	274	Dixwell Avenue.
Robert G. Tracy.....	493	Howard Avenue.
Joseph M. Flint.....	320	Temple Street.
Jacques L. Buttner.....	763	Orange Street.
Hugh F. Keating.....	619	Howard Avenue.
Alexander Bergman.....	49	Howe Street.
Albertus K. Boardman.....	411	Forbes Avenue.
Samuel J. Goldberg.....	314	George Street.
Israel Kleiner.....	193	York Street.
Abram A. Hershman.....	6	High Street.
George Goldman.....	1	Howe Street.
William P. Lang.....	1223	Chapel Street.
Wilda E. Butler.....	223	York Street.
Wm. C. McGuire.....	106	Park Street.
Alexander L. Prince.....	150	York Street.
John W. Churchman.....	59	College Street.
Stuart E. Skiff.....	1194	Chapel Street.
Robert J. Ferguson.....	59	College Street.
Huggard W. Nugent.....	432	Temple Street.
C. S. Lamb.....	776	Howard Avenue.
George R. James.....	686	State Street.
Max R. Smirnow.....	850	Howard Avenue.
Charles W. Comfort.....	1193	Chapel Street.
Francesco D'Agostino....	621	Chapel Street.
Harry S. Reynolds.....	136	Whalley Avenue.
Aubry L. Magill.....	68	Dixwell Avenue.
Thomas H. Russell, Jr.....	411	Temple Street.

Adelaide Lambert.....	86 Broadway.
James A. Harten.....	95 Olive Street.
Marvin Smith.....	73 Pearl Street.
Gabriel Jackowitz.....	312 Orange Street.
Alva G. Provost.....	286 Dixwell Avenue.
Paul R. Stetson.....	154 Shelton Avenue.
Joseph B. Monahan.....	631 Howard Avenue.
Charles T. Flynn.....	531 Winchester Avenue.
Walter C. Skiff.....	1184 Chapel Street.
Charles H. Carroll.....	236 Grand Avenue.
Grover C. Sweet.....	710 Howard Avenue.
Joseph V. Esposito.....	96 Greene Street.
Harry A. Conte.....	158 St. John Street.
John E. Lane.....	59 College Street.
Robert F. Scholl.....	485 Ferry Street.
Arthur R. Weed.....	199 York Street.
Herman R. White.....	416 Oak Place.
Maxwell Lear.....	33 Sylvan Avenue.
Fred W. Comstock.....	578 Howard Avenue.
Frederick H. Hynes.....	196 York Street.
Louis H. Levy.....	197 York Street.
William L. Sheahan, Jr.....	73 Sherman Avenue.
William T. Bull.....	59 College Street.
Herbert K. Thoms.....	419 Temple Street.
Milton L. Dryfus.....	86 Congress Avenue.

Ansonia:

Louis E. Cooper.
 Louis H. Wilmot.
 Edward K. Parmelee.
 Burton I. Tolles.
 William H. O'Neil.

Branford:

C. W. Gaylord.
 A. J. Tenney.

Cheshire:

Edward W. Karrman.

Derby:

Frank N. Loomis.
 Royal W. Pinney.
 Edward O'R. Maguire.

Frank A. Elmes.

Michael A. Parlato.

Wm. H. Treat.

E. T. Sharpe.

Thomas F. Plunkett.

Michael J. Sheahan.

East Haven:

Charles W. Holbrook.

Guilford:

R. B. West.

Hamden:

Walter S. Lay.

MOUNT CARMEL:

George H. Joslin.

Madison:

Milo P. Rindge.

Meriden:

N. Nickerson.
 A. W. Tracy.
 E. T. BRADSTREET
 J. D. Eggleston.
 Edward W. Smith.
 A. H. Fenn.
 E. W. Pierce.
 S. D. Otis.
 F. P. Griswold.
 E. D. Hall.
 H. A. Meeks.
 J. W. H. La Pointe.
 Joseph A. Cooke.
 Louis F. Wheatley.
 Michael J. Sullivan.
 H. DeForest Lockwood.
 James B. Dinnan.
 David P. Smith.
 John T. O'Brien.
 Leslie A. Wilson.
 Thomas P. Murdock.

Milford:

John W. Ives.
 W. J. H. Fischer.
 Louis J. Pons.

Naugatuck:

T. M. Bull.
 William J. Delaney.
 Edwin H. Johnson.
 John J. Carroll.
 James W. Robbins.
 Walter A. Reilly.
 Walter I. Baker.
 Frank J. Tuttle.
 Chester N. Woodford.

North Haven:

R. B. Goodyear.
 G. S. Higgins.

MONTOWESE:

Ralph W. Nichols.

Orange—WEST HAVEN:

J. F. Barnett.
 Charles D. Phelps.
 Victor A. Kowalewski.
 Joseph L. Gilmore.
 Ralph DeB. Clarke.
 Platt H. Rogers.

Seymour:

F. A. Benedict.
 E. W. Davis.
 Edward R. Harvey.

Wallingford:

William S. Russell.
 William P. Wilson.
 Caroline N. Stevens.
 David R. Lyman.
 John H. Buffum.
 J. David McGaughey.

Waterbury:

F. E. Castle.
 Walter L. Barber.
 C. W. S. Frost.
 C. S. RODMAN.
 J. M. Benedict.
 Carl E. Munger.
 B. A. O'Hara.
 John F. Hayes.
 A. A. Crane.
 P. T. O'Connor.
 John D. Freney.
 C. A. Hamilton.
 George O. Robbins.
 Charles H. Brown.
 Edward W. Goodenough.
 M. L. Cooley.
 F. G. Graves.
 James L. Moriarty.
 George W. Russell.
 D. J. Maloney.

Charles A. Monagan.
 H. G. Anderson.
 H. E. Hungerford.
 Nelson A. Pomeroy.
 Thomas J. Lally.
 P. J. Dwyer.
 L. J. Thibault.
 Wm. A. Goodrich.
 John E. Farrell.
 Charles Engelke.
 Thomas J. McLarney.
 A. C. Swenson.
 J. J. McLinden.
 Michael J. Donahue.
 Egbert L. Smith.
 John J. Gailey.
 Isabel Cowan.
 Arthur Variell.
 Aletta L. B. Deming.
 Theodore F. Bevans.

Arthur F. McDonald.
 Jacob Gancher.
 Henry K. Hine.
 Michael J. Lawlor.
 Edmund Russell.
 John W. Fruin.
 Walter L. Barber, Jr.
 Patrick J. Brennan.
 Edward A. Herr.
 T. G. Kilmartin.
 Daniel J. Byrne.
 Edward H. Kirschbaum.
 Eugene F. Callender.
 William M. Good.
 Caroline R. Conkey.
 Philip Frank.
 Raymond H. Ryder.
 Ernest H. Johnston.
 Edmund Spicer.
 Jacques H. Green.

Total Number, 287

NEW LONDON COUNTY.

W. HENRY GRAY, M.D., Mystic, *President*.

E. OLIVER WINSHIP, M.D., New London, *Vice President*.

LEONE F. LAPIERRE, M.D., Norwich, *Secretary*.

Councilor—PATRICK J. CASSIDY, M.D., Norwich.

Censors—JOHN G. STANTON, M.D., EDMUND P. DOUGLASS, M.D.,
 RUSH W. KIMBALL, M.D.

Annual Meeting, First Thursday in April; Semi-Annual, First
 Thursday in October.

East Lyme—NIANTIC:

Frederick H. Dart.
 Edward Atkinson.

Griswold—JEWETT CITY:

George H. Jennings.
 Alphonse Fontaine.
 (Moosup)

Groton:

Edmund P. Douglass.
 Frank W. Hewes.

NOANK:

William M. Hill.

Montville:

Frank E. Wilson.

UNCASVILLE:

Morton E. Fox.

COLCHESTER:

Edw. J. Howland.

New London:

JOHN G. STANTON.

Charles B. Graves.

Harold H. Heyer.

Carlisle F. Ferrin.

Thomas W. Rogers.

J. Clifton Taylor.

Harry M. Lee.

Emmanuel A. Henkle.

Edwin C. Chipman.

Gurdon S. Allyn.

Daniel Sullivan.

Joseph M. Ganey.

James L. Harrington.

Ernest O. Winship.

William D. Cronin.

Frank M. Dunn.

Stuart J. Lawson.

Lyme—OLD LYME:

Ellis K. Devitt.

Lebanon:

Edwin L. Danielson.

Norwich:

Patrick Cassidy.

Edward P. Brewer.

Newton P. Smith.

Witter K. Tingley.

William T. Browne.

Rush W. Kimball.

James J. Donahue.

Harry E. Higgins.

Charles H. Perkins.

Dennis J. Shahan.

Patrick J. Cassidy.

Edward J. Brophy.

Leone F. LaPierre.

William B. Casey.

Chas. C. Gildersleeve.

Arnand J. LaPierre.

Louis F. Cassidy.

Robert R. Agnew.

Hugh B. Campbell.

Thurman P. Maine.

John D. Donahue.

John J. Donahue.

TAFTVILLE:

George Thompson.

YANTIC:

Herbert H. Howe.

Sprague—BAL TIC:

James G. Burr.

Stonington:

George D. Stanton.

Charles M. Williams.

Robert E. Harrington.

(No. Stonington)

MYSTIC:

Louis M. Allyn.

William H. Gray.

Alexander M. Purdy.

Martin L. Smail.

OLD MYSTIC:

Albert T. Chapman.

Waterford:

George M. Minor.

Total Number, 65

FAIRFIELD COUNTY.

FRANK W. STEVENS, M.D., Bridgeport, *President*.

FRANK H. BARNES, M.D., Stamford, *Vice President*.

ELI B. IVES, M.D., Bridgeport, *Secretary*.

Councilor—SAMUEL M. GARLICK, M.D., Bridgeport.

Censors—JAMES D. GOLD, M.D., HARRIS F. BROWNLEE, M.D.,
GEORGE H. NOXON, M.D., Darien.

Annual Meeting, Second Tuesday in April, at Bridgeport;

Semi-Annual, Second Tuesday in October.

Bridgeport:

GEORGE L. PORTER.....	372 State Street.
F. M. Wilson.....	834-836 Myrtle Avenue.
J. W. Wright.....	808-810-812 Myrtle Avenue.
Charles C. Godfrey.....	340 State Street.
S. M. Garlick.....	474 State Street.
Henry Blodget.....	819 Myrtle Avenue.
J. C. Lynch.....	826 Myrtle Avenue.
G. W. Osborn.....	888 Broad Street.
J. R. Topping.....	349 Noble Avenue.
B. W. White.....	477 State Street.
Jacob May.....	1816 North Avenue.
George B. Cowell.....	409 Noble Avenue.
George E. Ober.....	632 Kossuth Street.
D. C. DeWolfe.....	516 Fairfield Avenue.
Henry S. Miles.....	417 State Street.
Fessenden L. Day.....	819 Myrtle Avenue.
Edward Fitzgerald.....	526 East Washington Avenue.
George S. Ford.....	527 State Street.
Frank M. Tukey.....	429 State Street.
William W. Gray.....	346 West Avenue.
James D. Gold.....	839 Myrtle Avenue.
Reuben A. Lockhart.....	760 Washington Avenue.
Frederick J. Adams.....	325 Fairfield Avenue.
W. J. O'Hara.....	361 Barnum Avenue.
David M. Trecartin.....	860 Park Avenue.
Harry W. Fleck.....	897 Lafayette Street.
Thomas L. Ellis.....	332 West Avenue.
Charles R. Townsend.....	446 State Street.
Herbert E. Smyth.....	376 John Street.
J. Murray Johnson.....	385 State Street.
Elmer F. Blank.....	387 Noble Avenue.
Irving L. Nettleton.....	775 Washington Avenue.

Edwards M. Smith.....	340	State Street.
Frank L. Smith.....	2178	Main Street.
David B. Wason.....	329	West Avenue.
Dorland Smith.....	834	Myrtle Avenue.
Frank W. Stevens.....	829	Myrtle Avenue.
George H. Warner.....	849	Myrtle Avenue.
Henry E. Waterhouse.....	426	State Street.
Robert J. Lynch.....	52	Courtland Street.
Charles J. Leverty.....	469	State Street.
Philip W. Bill.....	411	State Street.
F. Winthrop Pyle.....	528	State Street.
Eli B. Ives.....	561	State Street.
Frank H. Coops.....	411	State Street.
William C. Watson.....	446	Stratford Avenue.
Herman S. Schulz.....	390	State Street.
Nathan T. Pratt.....	1221	Stratford Avenue.
Charles N. Haskell.....	525	State Street.
Morris J. Greenstein.....	107	Benham Avenue.
Philip J. Curran.....	469	State Street.
Giovanni Formichelli.....	48	Walter Street.
James L. Sullivan.....	529	East Main Street.
Robert B. Keane.....	90	N. Washington Avenue.
William C. Bowers.....	336	State Street.
Charles W. Gardner.....	449	State Street.
Charles H. Sprague.....	168	West Liberty Street.
Daniel C. Patterson.....	819	Myrtle Avenue.
George W. Hawley.....	871	Park Avenue.
Florence A. Sherman.....	528	State Street.
William A. LaField.....	233	Fairfield Avenue.
Abraham Bernstein.....	346	State Street.
Nicola M. Sansome.....	519	Pembroke Street.
Benj. B. Finklestone.....	346	State Street.
Bronislaw L. Smykowski.....	405	Barnum Avenue.
Wm. L. Weadon.....	810	Myrtle Avenue.
Henry B. Lambert.....	411	State Street.
Frary Hale.....	477	State Street.
William H. Curley.....	697	Warren Street.
John F. Krasyne.....	720	Arctic Street.
Michael J. Rowe.....	1479	Main Street.
George J. Schuele.....	485	Noble Avenue.
John F. Shea.....	1246	East Main Street.
Andrew McQueeny.....	700	Noble Avenue.
Thomas J. Roche.....	432	State Street.
Edward F. McGovern.....	390	State Street.

H. LeBaron Peters.....233 Fairfield Avenue.
 Hermann Duesing.....1169 East Main Street.
 Arthur Scrimgeour.....701 Warren Street.
 Benjamin I. Hart.....323 State Street.
 Harold M. Clarke.350 Park Avenue.
 John F. Flynn.....Franklin Street and Wash. Avenue.
 Daniel J. McCarthy.....778 Washington Avenue.
 John J. MacDonald.....905 North Avenue.
 Joseph H. Beaudry.....835 State Street.
 John H. Finnegan.....1116 Stratford Avenue.
 Paul D. Hippolitus.....683 East Main Street.

Bethel:

A. E. Barber.
 George D. Wight.
 Charles R. Hart.

Brookfield—BROOKFIELD CENTER:

Charles A. Ryder.

Danbury:

E. A. Stratton.
 W. S. Watson.
 D. CHESTER BROWN.
 H. F. Brownlee.
 George E. Lemmer.
 Charles F. Craig.
 William F. Gordon.
 William T. Bronson.
 Richard M. English.
 Paul U. Sunderland.
 E. J. S. Scofield.
 Joseph W. Walsh.
 Howard D. Moore.
 Samuel F. Mullins.
 George E. Thielcke.
 Arthur C. Smith.

Darien:

George H. Noxon.

NOROTON:

Albert L. House.
 Harold E. Hoyt.

Fairfield:

W. H. Donaldson.

GREENFIELD HILL:

M. V. B. Dunham.

SOUTHPORT:

Charles E. Hyde.

Greenwich:

Frank Terry Brooks.
 Fritz C. Hyde.
 William L. Griswold.
 Alvin W. Klein.
 John A. Clarke.
 William Burke.
 Harriet B. Hyde.
 Edward O. Parker.

COS COB:

Thomas J. Bergin.

RIVERSIDE:

Charles Smith.

SOUND BEACH:

Sarah E. Finch.
 Albert E. Austin.

Huntington—SHELTON:

GOULD A. SHELTON.
 Wm. S. Randall.

Francis I. Nettleton.
John E. Black.
William M. Stockwell.

Monroe—STEPNEY DEPOT:

Francis J. Wales.

STEPNEY:

Geo. A. Smith.

New Canaan:

Myre J. Brooks.
Edmund J. O'Shaughnessy.
Charles B. Keeler.
Albert A. Wheelock.

Norwalk:

James G. Gregory.
James A. Meek.
S. H. Huntington.
William J. Tracey.
Arthur R. Turner.
Jesse M. Coburn.
Walter Hitchcock.
Ward S. Gregory.
Henry K. W. Kellogg.

SOUTH NORWALK:

C. G. Bohannan.
L. M. Allen.
Henry C. Sherer.
Jean Dumortier.
Francis E. Burnell.

Redding:

Ernest H. Smith.

Ridgefield:

Russell W. Lowe.
William H. Allee.
Benn A. Bryon.

Stamford:

A. M. Hurlbut.
Samuel Pierson.

A. N. Phillips.
F. Schavoir.
R. G. Philip.
George Sherrill.
W. E. Rice.
George R. Hertzberg.
J. J. Cloonan.
Dean Foster.
Donald R. MacLean.
Frank H. Barnes.
John H. Staub.
Richard L. Bohannan.
John F. Harrison.
Ralph W. Crane.
W. T. Godfrey.
Charles L. Dichter.
Samuel M. Shirk.
P. P. Van Vleet.
Julius Nemoitin.
Charles H. B. Meade.
J. Wait Avery.
I. F. Carroll.
Raymond R. Gandy.
Elfred C. Henderson.

Stratford:

W. B. Cogswell.
G. F. Lewis.
D. Howland.
Rollin A. Curtis.

Weston—LYONS PLAIN:

F. Gorham.

Westport:

F. Powers.
F. D. Ruland.
J. M. Nolan.
F. H. McLaury.
E. S. Brodsky.

GREEN'S FARMS:

David W. McFarland.

Total Number, 189.

WINDHAM COUNTY.OWEN O'NEIL, M.D., Willimantic, *President.*MARGUERITE J. BULLARD, M.D., Putnam, *Vice President.*LAURA HEATH HILLS, M.D., Willimantic, *Secretary and Treasurer.**Councilor*—SELDON B. OVERLOCK, M.D., Pomfret.*Censors*—ROBERT C. WHITE, M.D., Willimantic, EDWARD F. PERRY, M.D., Putnam.

Annual Meeting, Third Thursday in April; Semi-Annual Meeting, Third Thursday in October.

Brooklyn:

A. H. Tanner.

Hampton:

Arthur D. Marsh.

Killingly:

George Barnes.

DANIELSON:

RIENZI ROBINSON.

W. H. Judson.

George M. Burroughs.

EAST KILLINGLY:

Charles E. Hill.

Plainfield—

Arthur A. Chase.

CENTRAL VILLAGE:

James L. Gardner.

MOOSUP:

Charles N. Allen.

W. W. Adams.

Francis Downing.

Pomfret:

S. B. OVERLOCK.

Putnam:

John B. Kent.

F. A. Morrell.

Omer LaRue.

Warren W. Foster.

Marguerite J. Bullard.

Edward F. Perry.

Thompson:

Robert C. Paine.

Willimantic:

Frederick Rogers.

T. R. Parker.

R. C. White.

Laura H. Hills.

Joseph A. Girouard.

Clarence E. Simonds.

Owen O'Neil.

Charles H. Girard.

J. H. Egbert.

Louis I. Mason.

W. P. Stuart Keating.

Charles A. Jenkins.

Josaphat Gaucher.

Fred M. Smith.

Windham:

F. E. Guild.

Woodstock—EAST WOODSTOCK:

Ernest R. Pike.

Total Number, 36

LITCHFIELD COUNTY.

ROBERT HAZEN, M.D., Thomaston, *President*.

DAVID D. REIDY, M.D., Winsted, *Vice President*.

CHARLES H. TURKINGTON, M.D., Litchfield, *Secretary*.

Councilor—ELIAS PRATT, M.D., Torrington.

Censors—IRVING L. HAMANT, M.D., GEORGE H. WRIGHT, M.D.,
WILLIAM S. HULBERT, M.D.

Annual Meeting, Fourth Tuesday in April; Semi-Annual, First
Tuesday in October.

Canaan—FALLS VILLAGE:

Francis S. Skiff.

Thomas J. Shannon.

Cornwall—WEST CORNWALL:

Joseph Robinson.

Goshen:

J. H. North.

Litchfield:

John L. Buel.

Charles N. Warner.

Charles H. Turkington.

R. A. Marcy.

New Hartford:

Josiah Swett.

Chester F. English.

New Milford:

George E. Staub.

George H. Wright.

B. E. Bostwick.

Norfolk:

John C. Kendall.

I. L. Hamant.

Lucius D. Bulkley.

Frederick S. Dennis.

A. W. Pinney.

North Canaan—CANAAN:

John G. Adam.

Charles W. Camp.

Frank H. Lee.

Henry S. Turrill.

Plymouth—TERRYVILLE:

W. W. Wellington.

Richard J. Lawton.

Harold B. Woodward.

Roxbury:

Evans D. Russell.

Salisbury—LAKEVILLE:

William Bissell.

William B. Bissell.

Charles T. LaMoure.

Sharon:

Clarence W. Bassett.

Jerome S. Chaffee.

Thomaston:

Robert Hazen.

Ralph S. Goodwin.

James J. Kane.

Torrington:

William L. Platt.

Elias Pratt.

Jerome S. Bissell.

Charles H. Carlin.

Sanford H. Wadhams.

H. D. Moore.

William J. Hogan.

Timothy M. Ryan.

Harry B. Hanchett.

Washington:

Frederic W. Wersebe.
Harry E. Stewart.

Watertown:

Ernest K. Loveland.
James S. Martin.

Winchester—WINSTED:

Edward L. Pratt.
William S. Hulbert.
Salmon J. Howd.

David D. Reidy.
Ernest R. Kelsey.
Maurice J. Reidy.
Joseph D. Hartnett.

WEST WINSTED:

William S. Richards.

Woodbury:

William G. Reynolds.
Howard S. Allen.

Total Number, 57.

MIDDLESEX COUNTY.

ARTHUR B. COLEBURN, M.D., Middletown, *President*.

KATE C. MEAD, M.D., Middletown, *Vice President*.

JAMES H. KINGMAN, M.D., Middletown, *Secretary*.

Councilor—GEORGE N. LAWSON, M.D., Middle Haddam.

Censors—CHARLES E. STANLEY, M.D., CUSHMAN A. SEARS, M.D.,
FREDERICK B. BRADEEN, M.D.

Annual Meeting, Second Thursday in April; Semi-Annual, Second
Thursday in October.

Chatham—MIDDLE HADDAM:

George N. Lawson.

EAST HAMPTON:

Albert Field.
Frederick T. Fitch.

Chester:

Fred S. Smith.

Clinton:

David A. Fox.

Cromwell:

FRANK K. HALLOCK.
Charles E. Bush.
Charles A. McKendree.
(N. Y. City.)

Durham:

Charles E. Zink.

East Haddam:

M. W. Plumstead.

Essex:

Frederick B. Bradeen.
Charles C. Davis.

Haddam:

Leonard J. Lowe.

Middletown:

William E. Fisher.
Charles E. Stanley.
John E. Bailey.
Arthur J. Campbell.
Arthur B. Coleburn.

J. Francis Calef.
 John E. Loveland.
 Kate C. Mead.
 Daniel A. Nolan.
 John H. Mountain.
 Charles B. Young.
 Jessie W. Fisher.
 James T. Mitchell.
 James H. Kingman.
 Thomas P. Walsh.
 James Murphy.
 James M. Keniston.
 Louis R. Brown.
 Hamilton Rinde.
 Sidney A. Lord.
 Edgar Fauver.
 William M. Kenna.
 (Central Valley, N. Y.)

Michael D. Murphy.
 Louis Simonson.
 John L. Burnham.

Old Saybrook:

Calista V. Luther.
 Irwin Grannis.

Portland:

Cushman A. Sears.
 E. J. Lynch (Norwich).
 Frank E. Potter.
 Charles B. Chedel.

Saybrook—DEEP RIVER:

Howard T. French.
 Arthur M. Pratt.

Total Number, 46.

TOLLAND COUNTY.

THOMAS F. ROCKWELL, M.D., Rockville, *President*.
 THOMAS F. O'LOUGHLIN, Rockville, *Vice President*.
 ELI P. FLINT, M.D., Rockville, *Secretary and Treasurer*.
Councilor—THOMAS F. ROCKWELL, M.D., Rockville.
Censors—FREDERICK GILNACK, M.D., FRANK L. SMITH, M.D.,
 FREDERICK W. WALSH, M.D.

Annual Meeting, Third Tuesday in April; Semi-Annual, Third
 Tuesday in October.

Coventry:

Isaac P. Fiske.

SOUTH COVENTRY:

WILLIAM L. HIGGINS.

Hebron:

Cyrus H. Pendleton.

Mansfield—MANSFIELD DEPOT:

Donald L. Ross.

Somers:

Alonzo L. Hurd:

Stafford—STAFFORD SPRINGS:

CYRUS B. NEWTON.
 Frank L. Smith.
 James Stretch.
 John P. Hanley.

Tolland:

Willard N. Simmons.

Vernon—ROCKVILLE:

Frederick Gilnack.

Thomas F. Rockwell.

Eli P. Flint.

Thomas F. O'Loughlin.

Frederick W. Walsh.

Wright B. Bean.

F. M. Dickinson.

Total Number, 19.

OFFICERS OF THE CONNECTICUT STATE MEDICAL
SOCIETY FROM ITS ORGANIZATION IN 1792
TO THE PRESENT TIME.*

PRESIDENTS.

1792	Leverett Hubbard.	1876	Ashbel W. Barrows.
1794	Eneas Munson.	1877	Robert Hubbard.
1801	James Potter.	1878	Charles M. Carleton.
1803	Thomas Mosley.	1879	Alfred R. Goodrich.
1804	Jeremiah West.	1880	Gideon L. Platt.
1807	John R. Watrous.	1881	William Deming.
1812	Mason F. Cogswell.	1882	William G. Brownson.
1822	Thomas Hubbard.	1883	Elisha B. Nye.
1827	Eli Todd.	1884	Benjamin N. Comings.
1829	John S. Peters.	1885	Elijah C. Kinney.
1832	William Buel.	1886	Thomas H. Hills.
1834	Thomas Miner.	1887	Francis Bacon.
1837	Silas Fuller.	1888	George L. Porter.
1841	Elijah Middlebrook.	1889	Orlando Brown.
1843	Luther Ticknor.	1890	Melancthon Storrs.
1846	Archibald Welch.	1891	Charles A. Lindsley.
1849	George Sumner.	1892	Cyrus B. Newton.
1851	Rufus Blakeman.	1893	Francis D. Edgerton.
1853	Richard Warner.	1894	Francis N. Braman.
1854	William H. Cogswell.	1895	Seth Hill.
1856	Benjamin H. Catlin.	1896	Rienzi Robinson.
1858	Ashbel Woodward.	1897	Ralph S. Goodwin.
1861	Josiah G. Beckwith.	1898	Henry P. Stearns.
1863	Ebenezer K. Hunt.	1899	Charles S. Rodman.
1865	Nathan B. Ives.	1900	Leonard B. Almy.
1866	Isaac G. Porter.	1901	John H. Grannis.
1867	Charles Woodward.	1902	Gould A. Shelton.
1868	Samuel B. Beresford.	1903	Samuel B. St. John.
1869	Henry Bronson.	1904	William H. Carmalt.
1870	Charles F. Sumner.	1905	{ †Edward H. Welch. Nathaniel E. Wordin.
1871	Gurdon W. Russell.	1906	
1872	Henry W. Buel.	1907	William L. Higgins.
1873	Ira Hutchinson.	1908	Everett J. McKnight.
1874	Lowell Holbrook.	1909	Seldom B. Overlock.
1875	Pliny A. Jewett.		Samuel D. Gilbert.

* Prepared for the Secretary by Dr. J. B. Lewis, Hartford.

† Resigned.

1910	Frank K. Hallock.	
1911	John G. Stanton.	1914 } ‡Oliver C. Smith.
1912	E. T. Bradstreet.	} Stephen J. Maher.
1913	D. Chester Brown.	1915 Max Mailhouse.

VICE PRESIDENTS.

1792	Eneas Munson.	1872	Ira Hutchinson.
1794	Elihu Tudor.	1873	Lowell Holbrook.
1796	James Potter.	1874	Pliny A. Jewett.
1801	Thomas Mosley.	1875	Ashbel W. Barrows.
1803	Jeremiah West.	1876	Robert Hubbard.
1804	Jared Potter.	1877	Charles M. Carleton.
1806	John R. Watrous.	1878	Alfred R. Goodrich.
1807	Mason F. Cogswell.	1879	Gideon L. Platt.
1812	John Barker.	1880	William Deming.
1813	Timothy Hall.	1881	William G. Brownson.
1814	Thomas Hubbard.	1882	Elisha B. Nye.
1822	Eli Todd.	1883	Benjamin N. Comings.
1824	Eli Ives.	1884	Elijah C. Kinney.
1827	John S. Peters.	1885	Samuel Hutchins.
1829	William Buel.	1886	Francis Bacon.
1832	Thomas Miner.	1887	George L. Porter.
1834	Silas Fuller.	1888	Orlando Brown.
1837	Elijah Middlebrook.	1889	Charles J. Fox.
1841	Luther Ticknor.	1890	Charles A. Lindsley.
1843	Archibald Welch.	1891	Cyrus B. Newton.
1846	Dyer T. Brainard.	1892	Francis D. Edgerton.
1847	George Sumner.	1893	Francis N. Braman.
1849	Rufus Blakeman.	1894	Seth Hill.
1851	Richard Warner.	1895	Rienzi Robinson.
1853	William H. Cogswell.	1896	Ralph S. Goodwin.
1854	Benjamin H. Catlin.	1897	Henry P. Stearns.
1856	Ashbel Woodward.	1898	Charles S. Rodman.
1858	Josiah G. Beckwith.	1899	Leonard B. Almy.
1861	Ebenezer K. Hunt.	1900	John H. Grannis.
1863	Nathan B. Ives.	1901	Gould A. Shelton.
1865	Isaac G. Porter.	1902	Samuel B. St. John.
1866	Charles Woodward.	1903	William H. Carmalt.
1867	Samuel B. Beresford.	1904	Edward H. Welch.
1868	Henry Bronson.		{ Frederick A. Morrell.
1869	Charles F. Sumner.	1905	{ Eli P. Flint.
1870	Gurdon W. Russell.		{ Charles E. Brayton.
1871	Henry W. Buel.	1906	{ Franklin P. Clark.

1907	{ Miner C. Hazen.	1912	{ Frederick Gilnack.
	{ Irving L. Hamant.		{ Alvin E. Barber.
1908	{ Samuel D. Gilbert.	1913	{ William S. Hulbert.
	{ Walter L. Barber.		{ Kate C. Mead.
1909	{ Theodore R. Parker.	1914	{ Stephen J. Maher.
	{ William J. Tracey.		{ John B. Kent.
1910	{ Edmund P. Douglas.	1915	{ Charles B. Graves.
	{ Edward T. Bradstreet.		{ Cushman A. Sears.
1911	{ D. Chester Brown.		
	{ Ralph C. Paine.		

SECRETARIES.

1792	Jared Potter.	1843	Ralph Farnsworth.
1794	James Clark.	1844	Worthington Hooker.
1796	Daniel Sheldon.	1846	Gurdon W. Russell.
1798	Nathaniel Perry.	1849	Josiah G. Beckwith.
1800	Samuel Woodward.	1858	Panet M. Hastings.
1801	William Shelton.	1862	Leonard J. Sanford.
1805	John Barker.	1864	Moses C. White.
1810	Eli Ives.	1876	Charles W. Chamberlain.
1813	Joseph Foot.	1883	Samuel B. St. John.
1817	Jonathan Knight.	1889	Nathaniel E. Wordin.
1827	Samuel B. Woodward.	1905	Walter R. Steiner.
1830	George Sumner.	1912	Wilder Tileston.
1832	Charles Hooker.	1913	Marvin McR. Scarbrough.
1838	Archibald Welch.		

TREASURERS.

1792	John Osborn.	1829	Joseph Palmer.
1793	Jeremiah West.	1834	Elijah Middlebrook.
1794	John Osborn.	1837	Luther Tichnor.
1796	Mason F. Cogswell.	1841	Virgil Maro Dow.
1800	William B. Hall.	1851	George O. Sumner.
1808	Timothy Hall.	1863	James C. Jackson.
1813	Richard Ely.	1876	Francis D. Edgerton.
1816	Thomas Miner.	1883	Erastus P. Swasey.
1817	John S. Peters.	1889	William W. Knight.
1827	William Buel.	1905	Joseph H. Townsend.

ALPHABETICAL LIST

OF THE

MEMBERS OF THE CONNECTICUT STATE MEDICAL SOCIETY,

With Date and Place of Graduation, and Post-Office Address.

In preparing this list the Secretary has followed the list in the Proceedings of 1892, made with great care and labor by Dr. J. B. Lewis for the Centennial year. It may be relied upon as being correct to November 1, 1915.

Abrams, Alva Elnathan.....	Alhany, '81.....	Hartford.
Adam, John Geikie.....	Trinity, Tor., '00.....	North Canaan.
Adams, Frederick Joseph.....	Univ. N. Y., '98.....	Bridgeport.
Adams, Henry Eli.....	Yale, '02.....	Hartford.
Adams, William Waldo.....	Bellevue, '91.....	Moosup.
Agnew, Robert Robertson.....	Yale, '08.....	Norwich.
Alcorn, Thomas Grant.....	P. & S., Boston, '97....	Thompsonville.
Alcott, Ralph Waldo Emerson.....	U. S. Med. Coll., '81....	West Hartford.
Allee, William Hanford.....	P. & S., N. Y., '99.....	Ridgefield.
Allen, Charles Noah.....	Univ. Vt., '81.....	Moosup.
Allen, Howard Oliver.....	Univ. N. Y., '79.....	Broad Brook.
Allen, Howard S.	Yale, '04.....	Woodbury.
Allen, Lauren Melville.....	P. & S., N. Y., '80....	South Norwalk.
Allen, Millard Fillmore.....	Med. Chi., Phila., '95....	New Haven.
Alling, Arthur Nathaniel, B.A., Yale, '86....	P. & S., N. Y., '91.....	New Haven.
Allyn, Gurdon Spicer.....	Univ. Pa., '03.....	New London.
Allyn, Louis Maxson.....	Univ. Pa., '93.....	Mystic.
Alton, Charles De Lancey.....	Bellevue, '78.....	Hartford.
Anderson, Arvid.....	Univ. Mich., '93.....	New Britain.
Anderson, Henry Gray.....	P. & S., N. Y., '89.....	Waterbury.
Arnold, Ernest Hermann.....	Yale, '94.....	New Haven.
Arnold, Harold Sears, B.A., Yale, '00.....	Yale, '03.....	New Haven.
Atkinson, Edward.....	Univ. Vt., '93.....	Niantic.
Austin, Albert Elmer, A.B. & M.A., Amherst. Jeff., '05.....		Sound Beach.
Avery, John Waite.....	Univ. Vt., '97.....	Stamford.
Axtelle, John Franklin.....	L. I. Hosp. Coll., '71.....	Hartford.

Backus, Harold Simeon.....	L. I. Hosp. Coll., '03....	Broad Brook.
Bacon, Leonard Woolsey, B.A., Yale, '88.....	Yale, '92.....	New Haven.
Bailey, John Elmore.....	P. & S., N. Y., '85.....	Middletown.
Bailey, Michael Angelo.....	P. & S., Balt., '93.....	Hartford.
Bailey, Neil H.	P. & S., Balt., '11.....	Hartford.
Baker, Walter I.	Hahnemann, Phila., '98....	Naugatuck.

Barber, Alvin Elizur.....	Berkshire, '54.....	Bethel
Barber, Walter Lewis.....	Bellevue, '73.....	Waterbury.
Barber, Walter Lewis, Jr., A.B., Yale, '03.....	N. Y. Univ. & Bellevue, '07,	Waterbury.
Baribault, Arthur Octave.....	Vict. Med. Coll., '89.....	New Haven.
Barnes, Frank Hazelhurst.....	N. Y. Homeo. Med., '96.....	Stamford.
Barnes, George.....	Univ. N. Y., '04.....	Killingly.
Barnes, Wm. Samuel, Ph.B., Yale, '95.....	Yale, '97.....	New Haven.
Barnett, John Frederick.....	Yale, '69.....	West Haven.
Barrett, William Joseph.....	Md. Med., '04.....	New Haven.
Barrows, Benj. Safford, Ph.B., '83.....	Univ. N. Y., '87.....	Hartford.
Bartlett, Charles Joseph, B.A., Yale, '92;		
M.A., Yale, '94.....	Yale, '95.....	New Haven.
Bartlett, William Bradford.....	Harvard, '06.....	Hartford.
Bassett, Clarence Wheeler.....	Univ. N. Y., '82.....	Sharon.
Bcach, Charles Coffing, Ph.B., Yale, '77.....	P. & S., N. Y., '82.....	Hartford.
Beach, Charles Thomas.....	Yale, '05.....	Hartford.
Bean, William Hill, Ph.B., Yale, '82.....	Yale, '03.....	New Haven.
Bean, Wright Butler.....	P. & S., N. Y., '95.....	Rockville.
Beaudry, Joseph Horace.....	McGill, '13.....	Bridgeport.
Beck, Frederick George.....	Yale, '03.....	New Haven.
Bell, George Newton.....	Yale, '92.....	Hartford.
Bellosa, Frederick.....	Yale, '72.....	New Haven.
Benedict, Frank Allen.....	P. & S., N. Y., '87.....	Seymour.
Benedict, John Mitchell.....	Univ. N. Y., '82.....	Waterbury.
Bergin, Thomas Joseph, B.A., Yale, '96.....	Yale, '99.....	Cos Coh.
Bergman, Alexander, B.S., Stockholm.....	City of N. Y., '95.....	New Haven.
Bernstein, Abraham.....	Yale, '08.....	Bridgeport.
Bevans, Theodore F.	Univ. Minn., '03.....	Waterbury.
Bickford, Henry.....	Penn. Eclectic Med., '68.....	Hartford.
Bill, Philip Worcester, Ph.B., Yale '97.....	P. & S., N. Y., '01.....	Bridgeport.
Biram, James Harrington.....	Cornell, '10.....	Hartford.
Birdsong, Julian Lee, B.S., Nashville, '99.....	Johns Hopkins, '09.....	Hartford.
Bishop, Frederic Courtney, B.A., Yale, '92.....	Yale, '95.....	New Haven.
Bishop, Louis Bennett, B.A., Yale, '86.....	Yale, '88.....	New Haven.
Bissell, Jerome Samuel.....	Yale, '94.....	Torrington.
Bissell, William, B.A., Yale '53.....	Yale, '56.....	Lakeville.
Bissell, William Bascom, A.B., Yale, '88.....	P. & S., N. Y., '92.....	Lakeville.
Black, John Eugene, Ph.B., Yale, '03.....	Yale, '08.....	Shelton.
Blair, Edward Holden.....	P. & S., Balt., '06.....	Hartford.
Blake, Eugene Maurice.....	Yale, '06.....	New Haven.
Blank, Elmer Francis.....	Starling, '97.....	Bridgeport.
Blodget, Henry, A.B., Yale, '75.....	Bellevue, '81.....	Bridgeport.
Blumer, George, M.A., Yale, '07.....	Cooper Med. Coll., '90....	New Haven.
Boardman, Albertus Kellogg.....	Univ. Penn., '99.....	New Haven.
Bodley, George Houghton.....	Yale, '07.....	New Britain.
Bohannon, Charles Gordon.....	Univ. N. Y., '78.....	South Norwalk.
Bohannon, Richard Lee.....	Univ. N. Y., '74.....	Stamford.
Borden, Charles Herhert.....	P. & S., N. Y., '96.....	Hartford.
Bostwick, Benjamin Earle.....	L. I. Hosp. Coll., '90....	New Milford.
Botsford, Charles Porter.....	Yale, '94.....	Hartford.
Boucher, James Joseph.....	P. & S., Balt., '04.....	Hartford.
Boucher, John Bernard	P. & S., Balt., '94.....	Hartford.
Bowers, William Cutler.....	P. & S., N. Y., '77.....	Bridgeport.
Boyle, Robert J.	Yale, '08.....	Hartford.
Brackett, Arthur Stone, B.A., Yale, '92.....	Jefferson, '95.....	Bristol.

- Bradeen, Frederick Barton.....Univ. Pa., '99.....Essex.
Bradley, Mark Spaulding.....P. & S., N. Y., '92.....Hartford.
Bradstreet, Edward Thomas, B.A., Yale, '74...P. & S., N. Y., '77.....Meriden.
Brainard, Clifford Brewster, Ph.B., Yale, '94...Yale, '98.....Hartford.
Bray, Henry T.Univ. Vt., '02.....New Britain.
Brayton, Howard Wheaton, Ph.B., Brown, '06..Harvard, '11.....Hartford.
Brennan, Patrick Joseph.....Yale, '07.....Waterbury.
Brewer, Edward Pliny.....Dartmouth, '79.....Norwich.
Bridge, John Law, B.S., Wesleyan, '88;
 Ph.D., Clark, '94.....Harvard, '03.....Thompsonville.
Brodsky, Emanuel S.Univ. Zurich, Switzerland, '08, Westport.
Bronson, William Thaddeus.....Univ. N. Y., '98.....Danbury.
Brooks, Frank Terry, B.A., Yale, '90.....L. I. Hosp. Coll., '93.....Greenwich.
Brooks, Myre Joel.....Yale, '67.....New Canaan.
Brophy, Edward Joseph.....Yale, '04.....Norwich.
Brown, Charles Henry.....Univ. N. Y., '93.....Waterbury.
Brown, David Chester.....Yale, '84.....Danbury.
Brown, Louis Raymond, A.B., Tufts.....Tufts, '07.....Middletown.
Browne, William Tyler, Ph.B., Yale, '78.....Harvard, '82.....Norwich.
Brownlee, Harris Fenton.....P. & S., N. Y., '88.....Danbury.
Bryon, Benn AdelmerBellevue, '90.....Ridgefield.
Buel, John Laidlaw.....P. & S., N. Y., '88.....Litchfield.
Buffum, John Harold, Ph.B., Univ. Vt., '96...Univ. Vt., '98.....Wallingford.
Bulkley, Lucius Duncan, A.B., Yale, '66; M.A...P. & S., N. Y., '69.....Norfolk.
Bull, John Norris.....P. & S., N. Y., '78.....Plainville.
Bull, Thomas Marcus.....P. & S., N. Y., '87.....Naugatuck.
Bull, William Tillinghast, Ph.B. Yale, '88...P. & S., N. Y., '02.....New Haven.
Bullard, Marguerite Jane, A.B., Cornell, '02..Cornell Univ., '04.....Putnam.
Bunce, Philip Dibble, A.B., Yale, '88.....P. & S., N. Y., '91.....Hartford.
Burke, William.....L. I. Hosp. Coll., '96.....Greenwich.
Burnham, John Ladd, A.B., Yale, '96.....Yale, '97.....Middletown.
Burnell, Francis Edwin.....L. I. Hosp. Coll., '94..South Norwalk.
Burr, Noah Arthur.....Yale, '01.....South Manchester.
Burroughs, George McClellan.....Balt. Med. Coll., '00.....Danielson.
Bush, Charles Ellsworth.....Yale, '94.....Cromwell.
Butler, Wilda Edwin.....Hahnemann, Phila., '97...New Haven.
Butler, William James.....L. I. Hosp. Coll., '95...New Haven.
Buttner, Jacques Louis.....Yale, '09.....New Haven.
Byrne, Daniel J.Yale, '09.....Waterbury.
- Caldwell William Ely.....Balt. Med. Coll., '95...West Suffield.
Calef, Jeremiah Francis, B.A., Wesleyan, '77...Yale, '80.....Middletown.
Candler, Eugene F.Yale, '12.....Waterbury.
Camp, Charles Welford.....Univ. N. Y., '74.....Canaan.
Campbell, Arthur Joseph.....P. & S., Balt., '85.....Middletown.
Campbell, Hugh B.Univ. of Penn., '09.....Norwich.
Campbell, Sheldon Samuel Stratton.....Univ. Vt., '02.....Collinsville.
Cantarow, Daniel.....Tufts, '11.....Hartford.
Carlin, Charles Henry.....Univ. Mich., '96.....Torrington.
Carmalt, William Henry, M.A., Yale, '81...P. & S., N. Y., '61.....New Haven.
Carroll, Charles H.Yale, '12.....New Haven.
Carroll, Isaiah F.Balt. Med., '06.....Stamford.
Carroll, John James.....Dartmouth, '97.....Naugatuck.
Carter, Earl B., Ph.B., Yale, '07.....Johns Hopkins, '11.....Hartford.
Carver, John Preston.....Albany, '96.....Simshury.

Casey, William Bradford.....	Univ. Md., '06.....	Norwich.
Cassidy, Louis Thomas, Georgetown, '04.....	Georgetown, '08.....	Norwich.
Cassidy, Patrick.....	Univ. Vt., '65.....	Norwich.
Cassidy, Patrick John, B.A., Yale, '94.....	Johns Hopkins, '98.....	Norwich.
Castle, Frank Edwin.....	Yale, '70.....	Waterbury.
Chaffee, Jerome Stuart, Ph.B., Yale, '94.....	Univ. Pa., '97.....	Sharon.
Chapman, Albert Taylor.....	P. & S., N. Y., '64.....	Old Mystic.
Chase, Arthur Alverdo.....	Harvard '01.....	Plainfield.
Chedel, Charles Brigham, A.B., Dartmouth, '03.....	Dartmouth, '06.....	Portland.
Cheney, Benjamin Austin, B.A., Yale, '88.....	Yale, '90.....	New Haven.
Chester, Thomas Weston, B.A., Rutgers, '92;		
M.A., '95.....	P. & S., N. Y., '95.....	Hartford.
Chipman, Edwin Clifford, A.B., Alfred Univ. '87.....	P. & S., N. Y., '91.....	New London.
Churchman, John Woolman, B.A., '98;		
M.A., Princeton, '01.....	Johns Hopkins '02.....	New Haven.
Clark, Robert Moses.....	Univ. Pa., '91.....	New Britain.
Clarke, Harold Metcalf.....	Univ. Toronto, '09.....	Bridgeport.
Clarke, John Alexander.....	Bellevue, '97.....	Greenwich.
Clarke, Ralph DeBallard, A.B., Univ. N. Y., '04.....	Johns Hopkins, '08.....	West Haven.
Clary, George, A.B., Dartmouth, '52.....	Yale, '57.....	New Britain.
Clifton, Harry Colman.....	Univ. Pa., '01.....	Hartford.
Cloonan, John Joseph.....	P. & S., Balt., '97.....	Stamford.
Cobb, Albert Edward.....	Yale, '98.....	Hartford.
Coburn, Jesse Milton.....	Boston Univ., '74.....	Norwalk.
Cochran, Levi Bennett.....	Univ. Pa., '93.....	Hartford.
Cogswell, Eliot S.	Harvard, '12.....	Hartford.
Cogswell, William Badger.....	Bellevue, '81.....	Stratford.
Cohane, Jeremiah Joseph.....	Yale, '98.....	New Haven.
Cohane, Timothy Francis.....	Yale, '97.....	New Haven.
Coholan, Michael James.....	Univ. N. Y., '65.....	New Britain.
Coleburn, Arthur Burr.....	P. & S., N. Y., '90.....	Middletown.
Comfort, Chas. W., B.A., Yale, '11.....	Yale, '07.....	New Haven.
Comstock, Fred W.	Tufts Med., '13.....	New Haven.
Conkey, Caroline R.	Women's Med., '81.....	Waterbury.
Conklin, James Henry.....	Univ. Vt., '99.....	Hartford.
Conte, Harry A.	L. I. H. C., '12.....	New Haven.
Converse, George Frederick.....	Yale, '87.....	New Haven.
Coogan, Joseph Albert.....	Bellevue, '76.....	Windsor Locks.
Cook, Ansel Granville.....	P. & S., N. Y., '87.....	Hartford.
Cooke, Joseph Anthony.....	Yale, '97.....	Meriden.
Cooley, Clifton Mather.....	Yale, '08.....	New Britain.
Cooley, Myron Lynus.....	Buffalo Univ., '86.....	Waterbury.
Cooper, Louis Edward, Ph.B., '84.....	Yale, '86.....	Ansonia.
Coops, Frank Harvey, B.A., Dalhousie, '88.....	P. & S., Balt., '96.....	Bridgeport.
Costello, Henry N., B.A., Yale, '06.....	Johns Hopkins, '10.....	Hartford.
Cowan, Isabel.....	Wom. Med. Coll., N. Y., '92.....	Waterbury.
Cowell, George B.	P. & S., N. Y., '88.....	Bridgeport.
Cox, Ralph Benjamin.....	McGill, '02.....	Collinsville.
Coyle, Anna E.	Women's Med., '12.....	Windsor Locks.
Coyle, William Joseph.....	Buffalo Univ., '85.....	Windsor Locks.
Craig, Charles Franklin.....	Yale, '94.....	Danbury.
Crane, Augustus Averill, B.A., Yale, '85.....	Yale, '87.....	Waterbury.
Crane, Ralph William.....	Yale, '05.....	Stamford.
Crary, David.....	Yale, '69.....	Hartford.
Cronin, William Daniel.....	P. & S., N. Y., '00.....	New London.

Crossfield, Frederick Solon.....Bellevue, '78.....Hartford.
 Crothers, Thomas Davison.....Albany, '65.....Hartford.
 Crowe, Willis Hanford.....P. & S., N. Y., '95.....New Haven.
 Crowley, William H.Buffalo, '08.....Hartford.
 Curley, William Henry.....Cornell, '09.....Bridgeport.
 Curran, Philip John.....P. & S., N. Y., '01.....Bridgeport.
 Curtis, Rollin Alanson.....Univ. N. Y., '93.....Stratford.

D'Agostino, Francesco.....Naples Univ., Italy, '05.....New Haven.
 Daly, Charles W.P. & S., Balt., '10.....Hartford.
 Danielson, Edwin L.P. & S., N. Y., '82.....Lebanon.
 Dart, Frederick Howard.....P. & S., N. Y., '84.....Niantic.
 Davis, Charles Clarence.....Yale, '07.....Essex.
 Davis, Elias Wyman, B.A., Yale, '80.....Yale, '92.....Seymour.
 Day, Fessenden Lorenzo, B.A., Bates, '90.....Bellevue, '93.....Bridgeport.
 Deane, Henry Augustus.....Dartmouth, '68.....South Windsor.
 DeBonis, Domenico.....Naples, '90.....Hartford.
 DeForest, Louis Shepard, B.A., Yale, '79;

M.A., Yale, '91.....Univ. Jena, '85.....New Haven.
 Delaney, William Joseph.....McGill Univ., '87.....Nauugatuck.
 Deming, Alletta Langdon Bedford, A.B., Cornell, '05.....Waterbury.
 Deming, Clinton D., B.A., Yale, '07.....Johns Hopkins, '10.....Hartford.
 Deming, Edward A., Ph.B., Yale, '04.....Johns Hopkins, '08.....Hartford.
 Denne, Thomas Harman.....Vermont, '05.....Bloomfield.
 Dennis, Frederick Shepard, B.A., Yale, '72;

M.R.C.S.Bellevue, '74.....Norfolk.
 Devitt, Ellis King.....Univ. Med. Coll., '07.....Lyme.
 DeWolfe, Daniel Charles.....Univ. Vt., '86.....Bridgeport.
 Dichter, Charles Levi.....Md. Med. Coll., '05.....Stamford.
 Dickerman, Wilton Elias, B.A., Amherst, '90.....Yale, '93.....Hartford.
 Dickinson, Francis McLean, Ph.B., Yale, '00.....P. & S., N. Y., '05.....Rockville.
 Diefendorf, Allen Ross, B.A., Yale '94.....Yale, '96.....New Haven.
 Dinnan, James B.Yale, '04.....Meriden.
 Dole, Mary Phylinda, B.S., Mt. Holyoke, '89.....Wom. Med. Coll., '88.....New Haven.
 Donahue, James Joseph.....P. & S., Balt., '96.....Norwich.
 Donahue, John DanielBalt. Med., '09.....Norwich.
 Donahue, John James.....Balt. Med., '09.....Norwich.
 Donahue, Michael Joseph.....Univ. Pa., '86.....Waterbury.
 Donaldson, William Henry.....Univ. N. Y., '81.....Fairfield.
 Douglass, Edmund Peaslee.....Univ. N. Y., '89.....Groton.
 Dowd, Michael Joseph.....Balt. Med. Coll., '01.....Thompsonville.
 Dowling, John Francis.....L. I. Hosp. Coll., '90.....Hartford.
 Down, Edwin Augustus.....P. & S., N. Y., '87.....Hartford.
 Downing, Francis.....Balt. Med. Coll., '08.....Moosup.
 Dryfus, Milton L.Yale, '12.....New Haven.
 Duesing, Henry.....Univ. of Wurtzburg, '92.....Bridgeport.
 Dumortier, Jean.....Univ. Ghent, Belg., '89.....South Norwalk.
 Dunham, Martin Van Buren.....Harvard, '67.....Greenfield Hill.
 Dunn, Frank Martin.....Balt. Med. Coll., '08.....New London.
 Dwyer, Patrick James, A.B., Fordham, '94.....Univ. N. Y., '97.....Waterbury.
 Dwyer, Richard Joseph.....Jeff., Pa., '08.....Hartford.

Eddy, George William.....Vermont, '04.....Collinsville.
 Egbert, Jay Hobart, A.B., A.M., Univ. Chicago.....P. & S., N. Y., '97.....Willimantic.
 Eggleston, Jeremiah Dewey.....P. & S., N. Y., '79.....Meriden.

- Eliot, Gustavus, B.A., Yale, '77; A.M., '82...P. & S., N. Y., '80.....New Haven.
 Elliott, Calvin H.Med. Chi., '05, M.Sc. Buckland, '04, Hartford.
 Ellis, Thomas Long, B.A., Yale, '94.....Yale, '96.....Bridgeport.
 Elmer, Edward OliverP. & S., Balt., '94.....Hartford.
 Elmes, Frank Atwater.....Yale, '05.....Derby.
 Emmett, F. Arthur.....Yale, '02.....Hartford.
 Enders, Thomas Burnham, A.B., Yale, '88...P. & S., N. Y., '91.....Hartford.
 Engelke, Charles.....P. & S., N. Y., '02.....Waterbury.
 English, Charles Verrin.....St. Louis, '12.....Hartford.
 English, Richard Matthew.....Yale, '98.....Danbury.
 Esposito, Joseph V.Jeff., '12.....New Haven.
 Farrell, John Edward.....Univ. N. Y., '03.....Waterbury.
 Fauver, Edgar.....P. & S., Columbia, '09...Middletown.
 Felty, John Wellington, A.M., Emporia,
 Kan., '97.....Jefferson, '84.....Hartford.
 Fenn, Ava Hamlin.....P. & S., Balt., '86.....Meriden.
 Ferguson, Robert J.Hahn. Phila., '89.....New Haven.
 Ferrin, Carlisle Franklin, B.A., Univ. Vt., '91...P. & S., N. Y., '95....New London.
 Ferris, Harry Burr, B.A., Yale, '87.....Yale, '90.....New Haven.
 Field, AlbertL. I. Hosp. Coll., '67..East Hampton.
 Finch, George Terwilliger, B.A., Hobart, '75;
 M.A., Hobart, '78.....Bellevue, '77.....Thompsonville.
 Finch, Sarah Elizabeth.....Cornell, '04.....Sound Beach.
 Finnegan, John Hamill.....Maryland Med. Coll., '12..Bridgeport.
 Finklestone, Benjamin Brooks.....P. & S., Balt., '10.....Bridgeport.
 Fischer, Abraham.....N. Y. Univ. & Bell. Hosp., '09, Hartford.
 Fischer, William John HenryYale, '11.....Milford.
 Fisher, Jessie Weston.....Wom. Med. Coll., Pa., '93, Middletown.
 Fisher, William Edwin.....Univ. Pa., '76.....Middletown.
 Fiske, Isaac Parsons.....Univ. N. Y., '75.....Coventry.
 Fitch, Frederick Tracy.....Yale, '04.....East Hampton.
 Fitzgerald, Charles.....Univ. Vt., '98.....New Haven.
 Fitzgerald, Edward.....P. & S., Balt., '84.....Bridgeport.
 Fitzgerald, William Henry.....Univ. Vt., '95.....Hartford.
 Flaherty, Claude V.Yale, '10.....Hartford.
 Fleck, Harry Willard.....Jefferson, '96.....Bridgeport.
 Fleischner, Henry.....Yale, '78.....New Haven.
 Flint, Eli Percival.....Yale, '79.....Rockville.
 Flint, Joseph Marshall, B.S., Univ. of Chicago,
 '95; Princeton, '00; M.A., Yale, '07.....Johns Hopkins, '00.....New Haven.
 Flynn, Charles T.Yale, '11.....New Haven.
 Flynn, James Henry Joseph.....Yale, '95.....New Haven.
 Flynn, John Francis.....P. & S., Balt., '12.....Bridgeport.
 Fontaine, Alphonse.....Laval Univ., '92.....Moosup.
 Foote, Charles Jenkins, B.A., Yale, '83.....Harvard, '87.....New Haven.
 Ford, Alice Porter.....Wom. Med. Coll., Pa., '04, New Haven.
 Ford, George Skiff.....Bellevue, '93.....Bridgeport.
 Formicelli, Giovanni.....Univ. Italy, '98.....Bridgeport.
 Foster, Dean, M.A., Univ. Kan.....Yale, '99.....Stamford.
 Foster, Warren Woden.....Harvard, '82.....Putnam.
 Fox, David Austin.....Univ. & Belle., '02.....Clinton.
 Fox, Edward Gager.....Univ. N. Y., '83.....Wethersfield.
 Fox, Morton Earl.....L. I. Hosp. Coll., '03.....Uncasville.
 Fox, Percy W.Univ. Vt., '01.....New Britain.

- Frank, Philip.....Yale, '07.....Waterbury.
 French, Howard Truman.....P. & S., N. Y., '91.....Deep River.
 Freney, John Daniel.....L. I. Hosp. Coll., '93.....Waterbury.
 Fromen, Ernst Theodore.....Milwaukee Med. Coll., '97, New Britain.
 Frost, Charles Warren Selah.....P. & S., N. Y., '80.....Waterbury.
 Fruin, John William.....L. I. Hosp. Coll., '08.....Waterbury.
 Gailey, John Joseph.....Bowdoin, '98.....Waterbury.
 Gancher, Jacob.....L. I. Coll. Hosp., '06.....Waterbury.
 Gandy, Raymond R.Univ. Penn., '99.....Stamford.
 Ganey, Joseph Matthew.....P. & S., N. Y., '04.....New London.
 Gardner, Charles Wesley.....Univ. Md., '01.....Bridgeport.
 Gardner, James Lester.....Univ. Vt., '81.....Central Village.
 Garlick, Samuel Middleton, B.A., Dart., '74.....Harvard, '77.....Bridgeport.
 Gaucher, Josaphat.....Balt. Med., '12.....Willimantic.
 Gaylord, Charles Woodward, B.A., Yale, '70.....Yale, '72.....Branford.
 Gibbs, Joseph Addison.....P. & S., Chicago, '02.....Suffield.
 Gildersleeve, Charles Childs.....Yale, '96.....Norwich.
 Gill, Michael Henry.....Yale, '96.....Hartford.
 Gillam, William S.Univ. Pa., '88.....South Manchester.
 Gillin, Charles A.Univ. N. Y., '83.....New Britain.
 Gilmore, Joseph L.Yale, '04.....West Haven.
 Gilnack, Frederick.....P. & S., N. Y., '67.....Rockville.
 Girard, Charles Hermenigilde.....Victoria, '96.....Willimantic.
 Girouard, Joseph Arthur.....Balt. Med. Coll., '99.....Willimantic.
 Gladwin, Ellen Hammond.....Wom. Med. Coll., N. Y., '72, Hartford.
 Godfrey, Charles Cartlidge.....Dartmouth, '83.....Bridgeport.
 Godfrey, William Truitt.....Cornell, '07.....Stamford.
 Gold, James Douglass, Ph.B., Yale, '88.....P. & S., N. Y., '91.....Bridgeport.
 Goldherg, Samuel James.....Yale, '07.....New Haven.
 Goldman, George.....Yale, '10.....New Haven.
 Gompertz, Louis Michael.....Yale, '96.....New Haven.
 Good, William M.Yale, '09.....Waterbury.
 Goodenough, Edward Winchester, B.A.,
 Yale, '87.....Yale, '93.....Waterbury.
 Goodrich, Charles Augustus, B.S., Mass. Agr.
 Coll., '93.....P. & S., N. Y., '96.....Hartford.
 Goodrich, William Albert.....Med. Chi., Phila., '02.....Waterbury.
 Goodwin, Ralph Schuyler, Ph.B., Yale, '90.....P. & S., N. Y., '93.....Thomaston.
 Goodyear, Robert Beardsley.....Yale, '68.....North Haven.
 Gordon, William Francis.....L. I. Hosp. Coll., '96.....Danbury.
 Gorham, Frank.....Yale, '76.....Lyons Plains.
 Grannis, Irwin.....Yale, '96.....Old Saybrook.
 Graves, Charles Burr, B.A., Yale, '82.....Harvard, '86.....New London.
 Graves, Frederick George.....Yale, '92.....Waterbury.
 Gray, William Henry.....P. & S., N. Y., '89.....Mystic.
 Gray, William Wetmore, B.S., Dickinson, '85.....Bellevue, '90.....Bridgeport.
 Green, Jacques H.N. Y. Univ. & Bellevue Med. Coll., '13, Waterbury.
 Greenstein, Morris Jacob.....Univ. South, '06.....Bridgeport.
 Gregory, James Glynn, B.A., Yale, '65.....P. & S., N. Y., '68.....Norwalk.
 Gregory, Ward Slosson, Ph.B., Yale, '99.....P. & S., N. Y., '03.....Norwalk.
 Griggs, John Bagg.....Yale, '97.....Hartford.
 Griswold, Arthur Heywood, A.B., Harvard, '02.....Johns Hopkins, '06.....Hartford.
 Griswold, Frederick Pratt.....P. & S., N. Y., '76.....Meriden.
 Griswold, Julius Eghert.....Univ. N. Y., '79.....Rocky Hill.

- Griswold, Matthew H. Univ. Vt., '13..... Kensington.
 Griswold, Roger M. Univ. N. Y., '75..... Kensington.
 Griswold, William Loomis, Ph.B., Yale, '81... P. & S., N. Y., '85..... Greenwich.
 Guild, Frank Eugene..... L. I. Hosp. Coll., '85..... Windham.
- Hackett, John Francis, B.A., Yale..... McGill, '06..... Mansfield Depot.
 Hale, Fraray, B.S., Amherst, '05..... P. & S., N. Y., '09..... Bridgeport.
 Hall, Edward Dormenio Harvard, '73..... Meriden.
 Hall, Joseph Barnard..... Yale, '92..... Hartford.
 Hallock, Frank Kirkwood, A.B., Wesleyan, '82;
 A.M., '85..... P. & S., N. Y., '85..... Cromwell.
 Hamant, Irving Louis..... L. I. Hosp. Coll., '90..... Norfolk.
 Hamilton, Charles Allen..... Univ. Vt., '86..... Waterbury.
 Hammond, Samuel Mowhray..... Yale, '96..... New Haven.
 Hanchett, Harry Bigelow..... Jefferson, '05..... Torrington.
 Hanley, John Patrick..... Cornell, '06..... Stafford Springs.
 Harrington, Amos Thomas, A.B., Yale, '97... Harvard, '10..... Hartford.
 Harrington, James Leon..... Jefferson, '03..... New London.
 Harrington, Robert E. Balt. Med. Coll., '06 North Stonington.
 Harrison, John Francis..... Jefferson, '03..... Stamford.
 Hart, Benjamin I., B.A., N. Y. Univ., '00... P. & S., N. Y., '04..... Bridgeport.
 Hart, Charles Remington..... P. & S., N. Y., '59..... Bethel.
 Harten, James A. Balt. Med., '10..... New Haven.
 Hartnett, Joseph Daniel Balt. Med., '11..... Winsted.
 Hartshorn, Willis Ellis, Ph.B., Colo. Coll., '95.. Univ. Minn., '98..... New Haven.
 Harvey, Edward R. Balt. Med., '02..... Seymour.
 Haskell, Charles Nahum..... Univ. Vt., '90..... Bridgeport.
 Hatheway, Clarence Morris..... Bellevue, '03..... Hartford.
 Hawkes, William Whitney, B.A., Yale, '79... Yale, '81..... New Haven.
 Hawley, George Walter..... Cornell, '99..... Bridgeport.
 Hayes, John Francis..... Univ. N. Y., '79..... Waterbury.
 Haylett, Howard Bulkley..... Vermont, '07..... Hartford.
 Hazen, Robert, A.B., Univ. Vt., '96..... Univ. Vt., '98..... Thomaston.
 Henderson, Elfred Collard, B.S., Amherst, '99.. P. & S., N. Y., '03..... Bridgeport.
 Henkle, Emmanuel Alexander..... Cornell, '99..... New London.
 Henze, Carl William..... Yale, '00..... New Haven.
 Hepburn, Thomas Norval, A.B., Randolph
 Macon Coll., Va., A.B., '00; A.M., '01..... Johns Hopkins, '05..... Hartford.
 Herbert, Archibald Cecil..... Univ. Va., '03..... New Haven.
 Herr, Edward A., Dartmouth, '06..... Vermont, '09..... Waterbury.
 Hershman, Ahram Aron..... Yale, '08..... New Haven.
 Hertzberg, George Robert..... Dartmouth, '99..... Stamford.
 Hessler, Herman Philip..... Yale, '03..... New Haven.
 Heublein, Arthur Carl..... P. & S., N. Y., '02..... Hartford.
 Hewes, Frank William..... Univ. Vt., '94..... Groton.
 Heyer, Harold Hankinson..... Univ. N. Y., '87..... New London.
 Higgins, Gould Shelton..... Yale, '01..... North Haven.
 Higgins, Harry Eugene..... Univ. N. Y., '96..... Norwich.
 Higgins, William Lincoln..... Univ. N. Y., '90..... South Coventry.
 Hill, Charles Edwin, B.A., Yale, '76..... Harvard, '79..... East Killingly.
 Hill, William Martin..... Univ. Va., '97..... Noank.
 Hills, Laura Heath..... Wom. Med. Coll., '96..... Willimantic.
 Hine, Henry Kingsley..... Md. Med. Coll., '08..... Waterbury.
 Hitchcock, Walter, Ph.B., Yale, '80..... P. & S., N. Y., '83..... Norwalk.
 Hippolitius, Paul Difrancesca..... Yale, '12..... Bridgeport.

Hodgson, Thomas Cady, M.B., Toronto, '94...Trinity Medical Coll., '94, East Berlin.
 Hogan, William John.....Yale, '98.....Torrington.
 Holbrook, Charles Werden, M.A., Amherst, '93.Yale, '96.....East Haven.
 Horton, William Wickham.....Univ. N. Y., '79.....Bristol.
 Houghton, Simon Willard.....Bellevue, '79.....Hazardville.
 House, Albert Lewis.....Yale, '95.....Noroton.
 Howard, Arthur Wayland.....Univ. N. Y., '90.....Wethersfield.
 Howard, John.....Dartmouth, '81.....Hartford.
 Howd, Salmon Jennings.....Jefferson, '83.....Winsted.
 Howe, Herbert H.Univ. Vt., '80.....Yantic.
 Howland, DeRuyter.....P. & S., N. Y., '06.....Stratford.
 Howland, Edward Joseph.....Vt. Med., '11.....Colchester.
 Hoyt, Harold Eliphalet, A.B., Univ. Kansas, Albany, '94.....Noroton.
 Hulbert, William Sharon.....Univ. N. Y., '80.....Winsted.
 Hungerford, Henry Edward.....Yale, '98.....Waterbury.
 Huntington, Samuel Henry.....Yale, '76.....Norwalk.
 Hurd, Alonzo L., B.S., Me., '82.....Univ. Vt., '91.....Somers.
 Hurlhut, Augustin Moen, B.A., Yale, '76.....P. & S., N. Y., '79.....Stamford.
 Hyde, Charles Elias....Yale, '10.....Southport.
 Hyde, Fritz Carleton.....Univ. Mich., '00.....Greenwich.
 Hyde, Harriet Baker.....Univ. Mich., '00.....Greenwich.
 Hynes, Frederick H.Tufts Med., '13.....New Haven.
 Hynes, Thomas Vincent.....Yale, '00.....New Haven.

Ingalls, Phineas Henry, A.B., Bowdoin, '77;

A.M., '85.....P. & S., N. Y., '80.....Hartford.
 Irving, Samuel Wellington.....Yale, '91.....New Britain.
 Irwin, Vincent J., Jr.Yale, '10.....Granby.
 Ives, Eli Butler.....Yale, '03.....Bridgeport.
 Ives, John Wagner.....Yale, '00.....Milford.

Jackowitz, Gabriel, Boston Univ. Med. Coll., '07.....New Haven.
 James, George R.Yale, '10.....New Haven.
 Jarvis, Henry Gildersleeve, A.B., Yale, '06....Johns Hopkins, '10.....Hartford.
 Jenkins, Charles Albert....Balt. Med. Coll., '11.....Willimantic.
 Jennings, George Herman.....L. I. Hosp. Coll., '75.....Jewett City.
 Jones, Charles Emerson, Jr.Bellevue, '09.....Hartford.
 Johnson, Edwin Hines.....Univ. Vt., '88.....Naugatuck.
 Johnson, John Murray.....L. I. Hosp. Coll., '95.....Bridgeport.
 Joslin, George Harvey.....Univ. Vt., '87.....Mt. Carmel.
 Judson, William Henry.....Jefferson, '78.....Danielson.

Kane, James HughMd. Med. Coll., '04.....Thomaston.
 Kane, Thomas Francis.....Bellevue, '87.....Hartford.
 Karrman, Edward William.....N. Y. Univ., '84.....Cheshire.
 Keane, Robert Barnahas.....Bellevue, '03.....Bridgeport.
 Keating, Hugh Francis.....Yale, '08.....New Haven.
 Keating, Wm. Patrick Stuart.....Jefferson, '99.....Willimantic.
 Keeler, Charles B.Hahn, Chicago, '88.....New Canaan.
 Keith, Albert Russell, A.B., Colby, '97.....Harvard, '03.....Hartford.
 Kelsey, Ernest Russell.....Univ. Md., '01.....Winsted.
 Kellogg, Kenneth Evernghim.....P. & S., N. Y., '98.....New Britain.
 Kendall, John Calvin, B.A., Yale, '70.....P. & S., N. Y., '75.....Norfolk.
 Keniston, James Mortimer.....Harvard, '71.....Middletown.
 Kenna, William Matthew, Ph.B., Yale, '90....Yale, '92.....Middletown.

Kennedy, Philip Thomas, B.A., Trinity, '05....	Harvard, '09.....	Hartford.
Kent, John Bryden.....	Harvard, '60.....	Putnam.
Kiernan, James Mattbew.....	N. Y. Univ., '08.....	Bridgeport.
Kilbourn, Clarence Leishman.....	Yale, '97.....	New Haven.
Kilbourn, Joseph Austin.....	P. & S., Balt., '97.....	Hartford.
Kilmartin, Thomas J.	Univ. N. Y., '95.....	Waterbury.
Kimball, Rush Wilmot, A.B., Williams, '87....	L. I. Hosp. Coll., '90.....	Norwich.
King, Howard Frost.....	Alhany, '99.....	Windsor.
Kingman, James Henry, A.B., Yale, '82.....	P. & S., N. Y., '85.....	Middletown.
Kingsbury, Isaac William, A.B., Harvard, '96..	P. & S., N. Y., '03.....	Hartford.
Kingsbury, William Sanford.....	Yale, '96.....	Glastonbury.
Kinsella, Gertrude J.	Tufts, '12.....	New Britain.
Kirby, Frank Alonzo.....	Columbian Univ., Wash., D. C., '95,	New Haven.
Kirschbaum, Edw. H.	Yale, '12.....	Waterbury.
Klein, Alvin Walter.....	Cin. Coll. Med. & Surg., '89,	Greenwich.
Kleiner, Israel.....	Yale, '08.....	New Haven.
Knight, William Ward.....	Univ. N. Y., '76.....	Hartford.
Kowalewski, Victor Alexander, B.A., Yale, '99..	Yale, '02.....	West Haven.
Krasyne, John Francis, Carnegie Univ., B.A...	Valparaiso Univ., '11.....	Bridgeport.
La Field, Arthur Wm.	N. Y. Homeo., '05.....	Bridgeport.
Lally, Thomas John.....	Albany, '99.....	Waterbury.
Lamb, Chauncy Stafford.....	Univ. Buffalo, '93.....	New Haven.
Lambert, Adelaide.....	Boston Univ. Med. Coll., '84,	New Haven.
Lambert, Benjamin Lott.....	Univ. N. Y., '83.....	New Haven.
Lambert, Henry Bertram.....	Jeff., '09.....	Bridgeport.
Lampson, Edward Rutledge, A.B., Trinity, '91..	P. & S., N. Y., '96.....	Hartford.
Landry, Artbur B.	Jeff., '09.....	Hartford.
Lane, Frederick Pollock.....	Yale, '04.....	New Haven.
Lane, John E., B.A., Yale, '94, M.A., '97....	Yale, '03.....	New Haven.
Lang, William P.	Hahnemann, Phila., '01...	New Haven.
LaMoire, Charles TenEyck.....	Albany, '94.....	Lakeville.
LaPierre, Arnand J.	Univ. Vt., '10.....	Norwich.
LaPierre, Leone Franklin.....	Yale, '01.....	Norwich.
La Pointe, John William Henry.....	Laval Univ., Montreal, '92..	Meriden.
LaRue, Omar.....	Vict., Montreal, '71.....	Putnam.
Lawlor, Michael Joseph, Holy Cross, '02.....	P. & S., N. Y., '06.....	Waterbury.
Lawson, George Newton, B.A., Yale, '90.....	Yale, '92.....	Middle Haddam.
Lawson, Stuart Johnston.....	Univ. Md., '05.....	New London.
Lawton, Franklin Lyman, Ph.B., Yale, '90....	Yale, '93.....	Hartford.
Lawton, Richard J.	Md. Med., '08.....	Terryville.
Lay, Walter Sidders.....	Yale, '01.....	Hamden.
Lear, Maxwell.....	Yale, '11.....	New Haven.
Lee, Frank Herbert.....	Albany, '88.....	Canaan.
Lee, Harry Moore.....	Columbia, '98.....	New London.
Lemmer, George Edward.....	Bellevue, '85.....	Danbury.
Leverty, Charles Joseph.....	N. Y. Univ. & Bell., '01...	Bridgeport.
Levy, Louis H.	Yale, '11.....	New Haven.
Levy, William.....	Yale, '11.....	West Suffield.
Lewis, Dwight Milton, B.A., Yale, '97.....	Johns Hopkins '01.....	New Haven.
Lewis, George Francis, B.A., '64.....	Yale, '65.....	Collinsville.
Lewis, George Frederick, B.A., Trinity, '77....	Yale, '84.....	Stratford.
Linde, Joseph Irving.....	Yale, '08.....	New Haven.
Lindsley, Charles Purdy, Pb.B., Yale, '75....	Yale, '78.....	New Haven.
Locke, Harry L. F.	Tufts, '12.....	Hartford.

Lockhart, Reuben Arthur.....	Yale, '91.....	Bridgeport.
Lockwood, Howard DeForcest.....	Yale, '01.....	Meriden.
Loomis, Frank Newton, B.A., Yale, '81.....	Yale, '83.....	Derby.
Lord, Sidney Archer.....	Harvard, '94.....	Middletown.
Loveland, Ernest Kilburn.....	Yale, '97.....	Watertown.
Loveland, John Elijah, B.A., Wesleyan, '89....	Harvard, '92.....	Middletown.
Loewe, Leonard J., M.D.V., Harvard, '98....	Tufts, '01.....	Haddam.
Lowe, Leonard J., M.D.V., Harvard, '98....	Tufts, '01.....	Haddam.
Lowe, Russell Walter.....	Univ. N. Y., '89.....	Ridgefield.
Luby, John Francis, Ph.B., Yale, '76.....	P. & S., N. Y., '78.....	New Haven.
Ludington, Nelson Amos.....	Yale, '01.....	New Haven.
Luther, Calista Vinton.....	Wom. Med. Coll., Pa., '85, Old Saybrook.	
Lyman, David Russell.....	Univ. Va., '99.....	Wallingford.
Lyman, Emmett Judson.....	Yale, '07.....	Westbrook.
Lynch, Edward James.....	Univ. Pa. '09.....	Norwich.
Lynch, John Charles.....	Univ. N. Y., '86.....	Bridgeport.
Lynch, Robert Joseph.....	Bellevue, '97.....	Bridgeport.
Lyon, Edwin Bradbury.....	Berkshire, '62.....	Hartford.
Lyon, Trehy Williams.....	Yale, '03.....	New Haven.
MacDonald, John Joseph.....	Yale, '07.....	Bridgeport.
MacLean, Donald Robert.....	Balt. Med. Coll., '01.....	Stamford.
Madden, Leon Irving, A.B., Clark.....	Harvard, '10.....	Hartford.
Magill, Aubry L.	McGill Univ., '08.....	New Haven.
Maguire, Edward O'Reilly.....	P. & S., N. Y., '98.....	Derby.
Maher, James Stephen, Ph.B., Yale, '92.....	Yale, '96.....	New Haven.
Maher, Stephen John.....	Yale, '87.....	New Haven.
Mailhouse, Max, Ph.B., Yale, '76.....	Yale, '78.....	New Haven.
Maine, Thurman Park.....	Med. Chi., '12.....	Norwich.
Maloney, Daniel Joseph.....	Univ. N. Y., '96.....	Waterbury.
Maloney, Maurice Washington.....	Jeff. Med. Coll., Phil., '97, New Britain.	
Marcy, Robert A.	N. Y. Univ. Med. Coll., '82, Litchfield.	
Mariani, Nicola.....	Univ. Naples, '93.....	New Haven.
Marsh, Arthur D.	Yale, '08.....	Hampton.
Marsh, Arthur Washburn.....	Univ. Vt., '82.....	New Haven.
Martelle, Henry Augustus, A.B., Bowdoin, '01..	Johns Hopkins, '05.....	Hartford.
Martin, James S.	Yale, '05.....	Watertown.
Mason, Louis Irving.....	P. & S., N. Y., '91.....	Willimantic.
May, George William.....	Milwaukee Med. Coll., '95, So. Manchester.	
May, Jacob Rush.....	Chicago, '76.....	Bridgeport.
Mayherry, Franklin Hayden.....	Univ. Vt., '85.....	East Hartford.
McCabe, Edward Michael, B.A., Manhattan '83.	Yale, '87.....	New Haven.
McCarthy, Daniel Joseph.....	P. & S., Balt., '06.....	Bridgeport.
McClellan, William Ernest.....	Toronto, '04.....	Hartford.
McCook, John Butler, B.S., Trinity, '90.....	P. & S., N. Y., '94.....	Hartford.
McDermott, Terrance Stephen.....	Yale, '98.....	New Haven.
McDonald, Arthur Francis.....	P. & S., N. Y., '05.....	Waterbury.
McDonnell, Ralph Augustine, B.A., Yale, '90..	Yale, '92.....	New Haven.
McFarland, David Walter.....	Univ. N. Y., '85.....	Greens Farms.
McGaughey, James David.....	Jefferson, '10.....	Wallingford.
McGovern, Edward Francis.....	Univ. Balt., '01.....	Bridgeport.
McGuire, William C.	Yale, '09.....	New Haven.
McIntosh, Edward Francis.....	Yale, '97.....	New Haven.
McKee, Frederick Lyman.....	P. & S., N. Y., '99.....	Hartford.
McKendree, Charles A., A.B., Dartmouth, '07..	Dartmouth, '10.....	Cromwell.

McKnight, Everett James, B.A., Yale, '76;

M.A., '77.....	P. & S., N. Y., '79.....	Hartford.
McLarney, Thomas Joseph.....	P. & S., Balt., '97.....	Waterbury.
McLaury, Frank Harold.....	P. & S., N. Y., '95.....	Westport.
McLinden, James John.....	Univ. Pa., '98.....	Waterbury.
McNeil, Rollin.....	Yale, '62.....	New Haven.
McPartland, Patrick Farrell.....	Balt. Med. Coll., '05.....	Hartford.
McQueeney, Andrew.....	Yale, '05.....	Bridgeport.
McSweeney, Jeremiah Everett.....	Vermont, '91.....	Hartford.
Meade, Charles Havelock Beverly.....	Univ. of Louisville, '02.....	Stamford.
Mead, Kate Campbell.....	Wom. Med. Coll., Pa., '88,	Middletown.
Meagher, William F.	Univ. Vt., '99.....	Hartford.
Meek, James A.	McGill Univ., '75.....	So. Norwalk.
Meeks, Harold Albert.....	Bellevue, '90.....	Meriden.
Miles, Henry Shillingford, Ph.G., N. Y., '88..	P. & S., N. Y., '91.....	Bridgeport.
Miller, George Root.....	P. & S., Balt., '86.....	Hartford.
Miller, William Radley.....	Alhany, '98.....	Southington.
Minor, George Maynard.....	L. I. Hosp. Coll., '85.....	Waterford.
Mitchell, James Thomas.....	Univ. N. Y., '91.....	Middletown.
Molumphy, David James.....	Jefferson, '06.....	Hartford.
Monagan, Charles Andrew, B.S., Trinity, '93..	Univ. Pa., '98.....	Waterbury.
Monahan, Joseph B.	Dartmouth Med. Coll., '94,	New Haven.
Moody, Mary Blair.....	Buffalo, '76.....	New Haven.
Moore, Howard D.	Hahn, Phila., '93.....	Danbury.
Moore, Howard Doolittle.....	Bellevue, '97.....	Torrington.
Morgan, William Dennison, A.B., Trinity, '72..	P. & S., N. Y., '76.....	Hartford.
Moriarty, James Ligouri.....	Harvard, '96.....	Waterbury.
Morrell, Frederick Augustus.....	L. I. Hosp. Coll., '85.....	Putnam.
Morrissey, Michael Joseph.....	P. & S., Balt., Md., '97....	Hartford.
Morrissey, William Thomas, B.A.,		
Holy Cross Coll.,.....	Baltimore, '09.....	Unionville.
Morse, Vernon H. Chipman.....	Harvard, '03.....	Avon.
Moser, Oran Alexander.....	Yale, '02.....	Rocky Hill.
Moulton, Edward Seymour, B.A., Oberlin, '91..	Yale, '94.....	New Haven.
Mountain, John Henry.....	Jefferson, '96.....	Middletown.
Mullins, Samuel Frederick.....	Bellevue, '06.....	Danbury.
Munger, Carl Eugene, Ph.B., Yale, '80.....	P. & S., N. Y., '83.....	Waterbury.
Murdock, Thos. P.	Balt. Med., '10.....	Meriden.
Murphy, James.....	Univ. Pa., '95.....	Middletown.
Murphy, John Aloysius.....	N. Y. Univ., '97.....	New Haven.
Murphy, Michael D.	Bellevue, '84.....	Middletown.
Murphy, Walter Graham.....	Alhany Med. Coll., '90.....	Hartford.
Nadler, Alfred Goldstein, B.A., Yale, '93.....	Yale, '96.....	New Haven.
Naylor, James Henry.....	Univ. Vt., '95.....	Hartford.
Nemoitin, Julius.....	P. & S., N. Y., '05.....	Stamford.
Nettleton, Francis Irving, Ph.B., Yale, '94....	Yale, '97.....	Shelton.
Nettleton, Irving LaField.....	L. I. Hosp. Coll., '98.....	Bridgeport.
Newton, Cyrus Brownlee.....	Yale, '56.....	Stafford Springs.
Nichols, Ralph W., Yale '08.....	Johns Hopkins, '12.....	Montowese.
Nickerson, Nehemiah.....	N. Y. Med. Coll., '57.....	Meriden.
Nolan, Daniel Andrew, Ph.G., Phil., '93.....	Med. Chir., Phila., '95....	Middletown.
Nolan, Jacob Matthew.....	P. & S., Balt., '94.....	Westport.
North, Joseph Howard.....	L. I. Hosp. Coll., '73.....	Goshen.
Notkins, Louis Adolph.....	Yale, '03.....	New Haven.

- Noyes, Arthur Percy.....Univ. of Penn., '06.....Suffield.
 Noxon, George Henry.....Balt. Med. Coll., '93.....Darien.
 Nugent, Huggard W.Hahn., Phila., '10.....New Haven.

 Ober, George Eugene.....Univ. Vt., '90.....Bridgeport.
 O'Brien, John F.Yale, '08.....Meriden.
 O'Connell, Thomas Smith.....P. & S., Balt., '92.....East Hartford.
 O'Connor, Matthew Charles, A.B., St.
 Francis X., N. Y., '69.....P. & S., N. Y., '73.....New Haven.
 O'Connor, Patrick Thomas.....Bellevue, '92.....Waterbury.
 O'Flaherty, Ellen Pemhroke.....Cornell, '01.....Hartford.
 O'Hara, Bernard Augustine.....Bellevue, '82.....Waterbury.
 O'Hara, William James Aloysius.....P. & S., Balt., '93.....Bridgeport.
 O'Loughlin, Thomas Francis.....Univ. N. Y., '96.....Rockville.
 O'Neil, Owen.....Jefferson, '04.....Willimantic.
 O'Neil, William H.Balt. Med. Coll., '11.....Ansonia.
 Oshorn, George Wakeman, B.A., Yale, '84....P. & S., N. Y., '87.....Bridgeport.
 Osborne, Oliver Thomas.....Yale, '84.....New Haven.
 O'Shaughnessy, Edmund Joseph.....Bellevue, '99.....New Canaan.
 Otis, Samuel Dickinson.....Univ. N. Y., '77.....Meriden.
 Outerson, Andrew Mansergh.....Jefferson, '06.....Hartford.
 Outerson, Richard Amhrose.....Jefferson, '02.....Windsor Locks.
 Overlock, Seldom Burden, B.A., Colby, '86....Bellevue, '89.....Pomfret.
 Owens, William Thomas.....Univ. Vt., '99.....Hartford.

 Paine, Rohert Child.....Dartmouth, '00.....Thompson.
 Park, Charles Edwin.....Yale, '81.....New Haven.
 Parker, Edward Oliver, A.B., Harvard, '91....P. & S., N. Y., '96.....Greenwich.
 Parker, Theodore Raymond.....Univ. N. Y., '80.....Willimantic.
 Parlato, Michael Antonio.....Yale, '08.....Derhy.
 Parmelee, Edward Kihhe.....L. I. Hosp. Coll., '89.....Ansonia.
 Partree, Homer Tomlinson.....Yale, '92.....Torrington.
 Patterson, Daniel Cleveland.....P. & S., Balt., '06.....Bridgeport.
 Peck, Robert Ellsworth, Ph.B., Yale, '90.....Yale, '93.....New Haven.
 Peckham, Lucy Creemer.....Wom. Med. Coll., Pa., '85, New Haven.
 Pendleton, Cyrus Henry.....Western Reserve, '60.....Hebron.
 Perkins, Charles Harris.....P. & S., N. Y., '91.....Norwich.
 Perry, Edward Franklin.....L. I. Hosp. Coll., '97.....Putnam.
 Peters, H. LeBaron, B.A., Univ. N. B.McGill, '07.....Bridgeport.
 Phelps, Charles Dickinson, B.A., Amherst,
 '89; M.A., Amherst, '97.....P. & S., N. Y., '95.....West Haven.
 Phelps, Stuart E.McGill, '99.....Farmington.
 Philip, Rosavelle Gardner.....Wom. Med. Coll., N. Y. Inf., '75, Stamford.
 Phillips, Alfred Noroton.....P. & S., N. Y., '83.....Stamford.
 Phillips, Frank Lyman, Ph.B., Yale, '02.....Yale, '06.....New Haven.
 Pierce, Elbridge Worthington.....Univ. N. Y., '85.....Meriden.
 Pierson, John Corbin.....Tufts, '03.....Hartford.
 Pierson, Samuel.....P. & S., N. Y., '81.....Stamford.
 Pike, Ernest Reginald.....Univ. Mich., '98.....East Woodstock.
 Pinney, Almon WilliamHahn. Med. Coll., Phila., '00, Norfolk.
 Pinney, Royal Watson.....P. & S., N. Y., '88.....Derhy.
 Pitman, Edwin Parker, B.A., Dart., '86.....Dartmouth, '91.....New Haven.
 Platt, William Logan.....P. & S., N. Y., '81.....Torrington.
 Plumstead, Matthew Woodhury.....Jefferson, '87.....East Haddam.
 Plunkett, Thomas F.L. I. Coll. Hosp., '08.....Derby

- Pomeroy, Nelson Asa.....P. & S., N. Y., '96.....Waterbury.
 Pons, Louis Jacques.....Univ. Vt., '85.....Milford.
 Porter, George Loring, B.A., Brown, '59.....Jefferson, '62.....Bridgeport.
 Porter, Isaac Napoleon, B.A., Lincoln, '90....Yale, '93.....New Haven.
 Porter, William, Jr.Chicago Med. Coll., '81Hartford.
 Potter, Frank EdwardP. & S., N. Y., '89.....Portland.
 Potts, Joseph Henry.....Dartmouth, '05.....New Britain.
 Powers, Frederick.....P. & S., N. Y., '70.....Westport.
 Pratt, Arthur Milon.....Bellevue, '92.....Deep River.
 Pratt, Edward Loomis.....Univ. N. Y., '84.....Winsted.
 Pratt, Elias.....P. & S., N. Y., '87.....Torrington.
 Pratt, Nathan Tolles, A.B., Trinity, '94;
 M.A., '97.....Yale, '04.....Bridgeport.
 Prince, Alexander Louis.....Yale, '10.....New Haven.
 Provost, Alva G.Yale, '05.....New Haven.
 Purdy, Alexander Marshall.....Univ. Mich., '84.....Mystic.
 Purinton, Charles Oscar, Ph.B., Yale, '97....Yale, '00.....West Hartford.
 Purney, John.....Balt. Med. Coll., '06.....New Britain.
 Pyle, Francis Winthrop, A.B., Yale, '97.....P. & S., N. Y., '02.....Bridgeport.

 Rand, Richard Foster, Ph.B., Yale, '95.....Johns Hopkins, '00.....New Haven.
 Randall, William Sberman, Ph.B., Yale, '83....P. & S., N. Y., '86.....Shelton.
 Reardon, William F.Bellevue, '09.....Hartford.
 Reeks, Thomas Eben.....Univ. Md., '01.....New Britain.
 Reidy, David Dillon.....Med. Chi., Pbila., '99.....Winsted.
 Reidy, Maurice J.P. & S., N. Y., '10.....Winsted.
 Reilly, Francis HenryYale, '97.....New Haven.
 Reilly, James Michael.....Yale, '78.....New Haven.
 Reinert, Emil Gustav.....Balt. Med. Coll., '95.....Hartford.
 Reynolds, William George, A.B., Yale, '95....Yale, '97.....Woodbury.
 Reynolds, Harry S.Yale, '10.....New Haven.
 Rice, Richard W.Coll. Phys. & Surg., South Manchester.
 Rice, Watson Emmons.....Univ. Mich., '72.....Stamford.
 Richards, William Spencer.....Univ. N. Y., '89.....West Winsted.
 Rinde, Hamilton, N. Dakota, '02.....Johns Hopkins, '08.....Middletown.
 Rindge, Milo Pember.....P. & S., Cleveland, '05.....Madison.
 Ring, Henry Wilson, A.B., Bowdoin, '79;
 M.A., Bowdoin, '82.....Me. Med. Coll., '87.....New Haven.
 Rising, Harry Breed.....Yale, '95.....South Glastonbury.
 Robbins, Charles Henry.....Balt. Med. Coll., '95.....New Haven.
 Robbins, George Orrin.....Yale, '79.....Waterbury.
 Robbins, James Watson.....Bellevue, '80.....Naugatuck.
 Roberts, Albert Joseph.....Harvard, '02.....Bridgeport.
 Robinson, Joseph.....P. & S., N. Y., '98....West Cornwall.
 Robinson, Myron Potter.....Yale, '95.....Windsor Locks.
 Robinson, Paul Skiff, Ph.B., Yale, '89.....Yale, '91.....New Haven.
 Robinson, Rienzi.....L. I. Hosp. Coll., '69.....Danielson.
 Roche, Thomas Joseph.....P. & S., Balt., '11.....Bridgeport.
 Rockwell, Thomas Francis.....Univ. N. Y., '81.....Rockville.
 Rodman, Charles Shepard.....P. & S., N. Y., '68.....Waterbury.
 Rogers, Frederick.....Univ. N. Y., '63.....Willimantic.
 Rogers, James Frederick.....Yale, '05.....New Haven.
 Rogers, Platt H.Yale, '12.....West Haven.
 Rogers, Thomas Weaver.....P. & S., N. Y., '90.....New London.
 Ronayne, Frank Joseph.....Yale, '04.....Hartford.

Rooney, James Francis.....	Balt. Med. Coll., '03.....	Hartford.
Root, Edward King.....	Univ. N. Y., '79.....	Hartford.
Root, Joseph Edward, B.S., Boston Univ., '76..	P. & S., N. Y., '83.....	Hartford.
Rose, John Henry.....	Univ. N. Y., '92.....	Hartford.
Ross, Donald Laurence.....	McGill, '87.....	Mansfield Depot.
Rowe, Michael Joseph.....	P. & S., Balt., '96.....	Bridgeport.
Rowley, Alfred Merriman.....	Univ. Vt., '97.....	Hartford.
Rowley, John Carter.....	Harvard, '06.....	Hartford.
Rowley, Robert Lee.....	Yale, '03.....	Hartford.
Ruland, Frederick Davis.....	P. & S., N. Y., '89.....	Westport.
Russ, Henry Camp, B.A., Yale, '02.....	Johns Hopkins, '06.....	Hartford.
Russell, Edmund.....	Univ. of Penn., '04.....	Waterbury.
Russell, Evans Dounton.....	Jeff., '11.....	Roxbury.
Russell, George Washington.....	Bellevue, '96.....	Waterbury.
Russell, Thomas Hubbard, Ph.B., Yale, '72....	Yale, '75.....	New Haven.
Russell, Thomas H., Jr., Ph.B., Yale, '06.....	Yale, '10.....	New Haven.
Russell, William Spencer.....	Yale, '80.....	Wallingford.
Ryan, Joseph Patrick.....	P. & S., N. Y., '03.....	Hartford.
Ryan, Patrick Joseph.....	Niagara, '98.....	Hartford.
Ryan, Timothy Mayher, A.B., Loyola Coll....	Balt. Med. Coll., '02.....	Torrington.
Ryder, Charles Ambler.....	Yale, '98.....	Brookfield Center.
Ryder, Raymond H.	P. & S., Balt., '13.....	Waterbury.
Sanford, Charles Edwin.....	Yale, '06.....	New Haven.
Sanford, Leonard Cutler, B.A., Yale, '90.....	Yale, '93.....	New Haven.
Sanford, Ward Harding.....	Balt. Med. Coll., '95.....	New Haven.
Sansone, Nicola Maria.....	Denver Med. Coll., '02....	Bridgeport.
Scarhrough, Marvin McRae, B.A., Univ. of Oregon, '02; M.A., Yale, '05.....	Yale, '07.....	New Haven.
Schavoir, Frederick.....	P. & S., Balt., '87.....	Stamford.
Scholl, Robert F.	Yale, '12.....	New Haven.
Schuele, George J.	Yale, '08.....	Bridgeport.
Schulz, Herman Samuel.....	Hahn., Phila., '01.....	Bridgeport.
Scofield, Everett J. S.	Univ. of N. C., '08.....	Danbury.
Scrimgeour, Arthur.....	L. I. Coll. Hosp., '09.....	Bridgeport.
Sears, Cushman Allen.....	Univ. N. Y., '62.....	Portland.
Segur, Gideon Cross.....	P. & S., N. Y., '82.....	Hartford.
Shahan, Dennis Joseph.....	Univ. Vt., '85.....	Norwich.
Shannon, Thomas J.	Balt. Med., '99.....	Falls Village.
Sharpe, Elmer Thomas.....	Univ. N. Y., '95.....	Derby.
Sharpe, Harry Rabe.....	Univ. Vt., '00.....	Manchester.
Shea, John F.	P. & S., Balt., '11.....	Bridgeport.
Sheahan, Michael J.	Yale, '96.....	Derby.
Sheahan, William L., Jr.	P. & S., Balt., '12.....	New Haven.
Shelton, Gould Abijah, M.A., Yale, '91.....	Yale, '69.....	Shelton.
Sherer, Henry Clifford.....	Univ. N. Y., '92.....	South Norwalk.
Sherman, Florence A.	Wom. Med. Coll., '91.....	Bridgeport.
Sherrill, George.....	P. & S., '91.....	Stamford.
Shirk, Samuel Martin.....	Hahn., Phila., '97.....	Stamford.
Simmons, Willard Nelson.....	Univ. Vt., '89.....	Tolland.
Simonds, Clarence Eugene.....	Univ. N. Y., '97.....	Willimantic.
Simonson, Louis, Mass. Coll.....	Tufts, '08.....	Hartford.
Simpson, Frederick Thomas, B.A., Yale, '79....	Me. Med. Coll., '84.....	Hartford.
Skiff, Francis Sands.....	Univ. N. Y., '88.....	Falls Village.
Skiff, Stuart E.	Hahn. Phila., '03.....	New Haven.

- Skiff, Walter C.N. Y. Hom. Coll., '83....New Haven.
 Skinner, Clarence Edward, LL.D.,
 Rutherford, N. C., '00.....Yale, '91.....New Haven.
 Slattery, Morris Dove.....Yale, '93.....New Haven.
 Sloan, Thomas George.....P. & S., N. Y., '99..South Manchester.
 Smail, Martin L.Univ. Vt., '93.....Mystic.
 Smirnow, Max RuskinYale, '06.....New Haven.
 Smith, Arthur Charles.....P. & S., Balt., '10.....Danbury.
 Smith, Charles.....L. I. Hosp. Coll., '90.....Riverside.
 Smith, David Parker, A.B., Yale, '10.....Yale, '12.....Meriden.
 Smith, Dorland, A.B., Yale, '96.....Yale, '99.....Bridgeport.
 Smith, Earl Terry, M.A., Trinity, '03 Hon....Yale, '97.....Hartford.
 Smith, Edwards Montrose.....P. & S., N. Y., '82.....Bridgeport.
 Smith, Edward Weir, A.B., Yale, '78.....McGill, Mont., '82.....Meriden.
 Smith, Eghert Livingston.....Yale, '96.....Waterbury.
 Smith, Ernest Herman, A.B., Amherst, '85....P. & S., N. Y., '89.....Redding.
 Smith, Frank Lewis.....Univ. N. Y., '75....Stafford Springs.
 Smith, Frank Llewellyn.....Alhany, '83.....Bridgeport.
 Smith, Fred M.Univ. Vt., '11.....Willimantic.
 Smith, Frederick Sumner, B.A., Yale, '79....Yale, '82.....Chester.
 Smith, George Arthur, A.B., Yale, '03.....Johns Hopkins, '07.....Stepney.
 Smith, Henry Hubert.....Jefferson, '77.....New Haven.
 Smith, Marvin.....Univ. N. Y., '83.....New Haven.
 Smith, Newton Phineas.....P. & S., N. Y., '82.....Norwich.
 Smykowski, Bronislaw Louis.....Balt. Med., '11.....Bridgeport.
 Smyth, Herhert Edmund.....McGill Univ., '84.....Bridgeport.
 Sperry, Frederick Noyes.....Yale, '94.....New Haven.
 Spier, Seymour Leopold.....Yale, '04.....New Haven.
 Spicer, Edmund.....Yale, '05.....Waterbury.
 Sprague, Charles Harry.....P. & S., N. Y., '04.....Bridgeport.
 Standish, Frank Billings.....Yale, '03.....New Haven.
 Standish, James Herhert.....Univ. N. Y., '95.....Hartford.
 Stanley, Charles Everett.....Univ. Pa., '76.....Middletown.
 Stanton, George Dallas.....Bellevue, '65.....Stonington.
 Stanton, John Gilman, B.A., Amherst, '70....Wurtzhurg, '73.....New London.
 Starr, Robert Sythoss, B.A., Trinity, '97;
 M.A., '00.....P. & S., N. Y., '01.....Hartford.
 Stauh, George Edwards.....L. I. Hosp. Coll., '93....New Milford.
 Stauh, John Howard.....L. I. Hosp. Coll., '99.....Stamford.
 Steadman, Willard George.....Bellevue, '74.....Southington.
 Steele, Henry Merriman, Ph.B., Yale, '94....Johns Hopkins, '02.....New Haven.
 Steiner, Walter Ralph, A.B., Yale, '92;
 M.A., Yale, '95.....Johns Hopkins, '98.....Hartford.
 Stern, Charles Seymour, A.B., C. C. N. Y....Bellevue, '91.....Hartford.
 Stetson, James Ebenezer.....Yale, '81.....New Haven.
 Stetson, Paul R.Yale, '02.....New Haven.
 Stevens, Caroline North.....Tufts, '98.....Wallingford.
 Stevens, Frank William.....Yale, '00.....Bridgeport.
 Stewart, Harry Eaton.....Yale, '10.....Washington.
 Stockwell, William Myron.....Univ. of Penn., '04.....Shelton.
 Stoll, Henry Farnum.....P. & S., N. Y., '02.....Hartford.
 Storrs, Eckley Raynor.....Jefferson, '90.....Hartford.
 Stratton, Edward Augustus.....Univ. N. Y., '83.....Danbury.
 Stretch, James.....Univ. Coll., Richmond, Va., '02, Stafford Springs.
 Strohel, Joseph E.Temple, '09.....Hartford.

Strosser, Herman.....	Univ. Berlin, '84.....	New Britain.
Sullivan, Daniel.....	Univ. N. Y., '97.....	New London.
Sullivan, Daniel Francis, A.B., Niagara Univ., '89.....	Niagara Univ., '91.....	Hartford.
Sullivan, James Laurence.....	P. & S., Balt., '01.....	Bridgeport.
Sullivan, Jeremiab Bartlett, Yale, '03.....	Yale, '06.....	New Haven.
Sullivan, John Francis, B.A., Yale, '90.....	P. & S., N. Y., '94.....	New Haven.
Sullivan, Michael Joseph.....	Cornell, '00.....	Meriden.
Sunderland, Paul Ulysses.....	N. Y. Hom. Med., '94.....	Danbury.
Swain, Henry Lawrence.....	Yale, '84.....	New Haven.
Swan, Horace Cheney.....	Tufts, '03.....	Hartford.
Swasey, Erastus Perry.....	P. & S., N. Y., '69.....	New Britain.
Sweet, Grover C.	P. & S., Balt., '12.....	New Haven.
Sweet, John H. T.	Tufts, '12.....	Hartford.
Swenson, Andrew Clay.....	Yale, '02.....	Waterbury.
Swett, Josiah.....	Univ. Vt., '78.....	New Hartford.
Swett, Paul Plummer.....	Univ. N. Y., '04.....	Hartford.
Taft, Charles Ezra.....	Harvard, '86.....	Hartford.
Tanner, Alfred Herbert.....	Bellevue, '74.....	Waukegan.
Taylor, John Clifton.....	Univ. Mich., '91.....	New London.
Taylor, Maude Winifred.....	Tufts, '05.....	Hartford.
Teele, Julia Ernestine, A.B., Tabor, '85.....	Wom. Med. Coll., Pa., '88.....	New Haven.
Tenney, Arthur John, Pb.B., Yale, '77.....	Yale, '83.....	Branford.
Thibault, Louis Joseph.....	Yale, '00.....	Waterbury.
Tbielke, George Emanuel.....	Yale, '10.....	Danbury.
Thompson, Emma Jane.....	Wom. Med. Coll., N. Y. Inf., '96.....	Hartford.
Thompson, George.....	Me. Med. Coll., '89.....	Taftville.
Thompson, Whitefield Nelson, A.B., Bates, '88.....	Jefferson, '89.....	Hartford.
Tileston, Wilder, Harvard, '95.....	Harvard, '99.....	New Haven.
Tingley, Witter Kinney.....	Bellevue, '86.....	Norwich.
Tinker, William Richard.....	Univ. N. Y., '80.....	South Manchester.
Tolles, Burton Isaac, A.B., Yale, '01.....	Yale, '04.....	Ansonia.
Topping, Jacob Reed.....	Univ. N. Y., '82.....	Bridgeport.
Townsend, Charles Rodman.....	Albany, '95.....	Bridgeport.
Townsend, Jos. Hendley, B.A., Yale, '85.....	Yale, '87.....	New Haven.
Townshend, Raynham, Ph.B., Yale '00.....	P. & S., N. Y., '05.....	New Haven.
Tracey, Dwight Wallace, Ph.B., Yale, '04.....	Johns Hopkins, '08.....	Hartford.
Tracey, William Joseph.....	Univ. N. Y., '89.....	Norwalk.
Tracy, Andrew William.....	McGill, '73.....	Meriden.
Tracy, Robert Graham.....	Yale, '00.....	New Haven.
Travis, Catherine Hutchison.....	Johns Hopkins, '03.....	New Britain.
Treat, William Howard.....	Yale, '06.....	Derby.
Trecartin, David Munson.....	Dartmouth, '94.....	Bridgeport.
Truex, Edward Hamilton.....	Univ. Louisville, '08.....	East Hartford.
Tuch, Morris.....	Bellevue, '06.....	Hartford.
Tukey, Frank Martin, B.A., Bowdoin, '91.....	Harvard, '94.....	Bridgeport.
Turbert, Edward Joseph.....	Balt. Med. Coll., '04.....	Hartford.
Turkington, Charles Henry, Pb.B., Yale, '03.....	Johns Hopkins, '07.....	N. Y. City.
Turner, Arthur Robert, A.B., Amherst, '84.....	Univ. Paris, '94.....	Norwalk.
Turrill, Henry Smith, Pb.B., Yale, '06.....	Yale, '10.....	Canaan.
Tuttle, Charles Alling, Ph.B., Yale, '88.....	Yale, '90.....	New Haven.
Tuttle, Frank James.....	Univ. Vt., '98.....	Naugatuck.
Vail, George Francis, B.S., Villanova, '98.....	Univ. Pa., '02.....	Hartford.

VanStrander, William Harold.....	Univ. Vt., '00.....	Hartford.
Van Vleet, Peter P.	Bellevue, '69.....	Stamford.
Variell, Arthur.....	Bowdoin, '94.....	Waterbury.
Varno, Henry George.....	P. & S., Balt., '82....	Thompsonville.
Verdi, William Francis.....	Yale, '94.....	New Haven.
Wadhams, Sanford Hosea.....	Yale, '96.....	Torrington.
Waite, Frank Louis.....	Bellevue, '88.....	Hartford.
Waite, Robt. L., Ph.B., '05.....	Johns Hopkins, '09.....	Hartford.
Wales, Francis Joseph.....	N. Y. Univ. '97.....	Stepney Depot.
Walsh, Frederick William.....	P. & S., Balt., '85.....	Rockville.
Walsh, Joseph William.....	P. & S., Balt., '07.....	Danbury.
Walsh, Thomas Patrick.....	Univ. Vt., '02.....	Middletown.
Ward, James Ward.....	P. & S., Balt., '95.....	Hartford.
Warner, Charles Norton.....	Jefferson, '96.....	Litchfield.
Warner, George Howell.....	Yale, '97.....	Bridgeport.
Wason, David Boughton.....	P. & S., N. Y., '00.....	Bridgeport.
Waterhouse, Henry Edwin.....	P. & S., N. Y., '02.....	Bridgeport.
Waterman, Paul.....	Cornell, '02.....	Hartford.
Waters, John Bradford.....	Univ. Vt., '90.....	Hartford.
Watson, William Clark.....	L. I. Hosp. Coll., '97.....	Bridgeport.
Watson, William Seymour.....	L. I. Hosp. Coll., '87.....	Danbury.
Weadon, William Lee.....	Va. Med. Coll., '05.....	Bridgeport.
Weidner, Calvin.....	Univ. Ind., '93.....	Hartford.
Weir, Janet Marshall.....	Queen's Univ., Kingston, Ont., '91,	Hartford.
Welch, George Kellogg.....	P. & S., N. Y., '78.....	Hartford.
Welch, Harry Little, A.B., Yale, '94.....	Yale, '97.....	New Haven.
Welch, Thomas Francis.....	Georgetown, '04.....	Hartford.
Welch, William Collins.....	Yale, '77.....	New Haven.
Weldon, Thomas Henry.....	Univ. N. Y., '83....	South Manchester.
Wellington, William Winthrop.....	Univ. Vt., '89.....	Terryville.
Wells, Ernest Alden, A.B., Yale, '97.....	Johns Hopkins, '01.....	Hartford.
Versehe, Frederick William.....	Univ. N. Y., '98.....	Washington.
West, Redfield Benjamin.....	Univ. N. Y., '79.....	Guilford.
Whalen, Edward J.	Yale, '08.....	Hartford.
Wheatley, Louis Frederick.....	Tufts, '03.....	Meriden.
Wheeler, Frank Henry, B.A., Yale, '80.....	Yale, '82.....	New Haven.
Wheelock, Albert Andrews.....	Univ. Vt., '97.....	New Canaan.
Whipple, Benedict Nolasco.....	Yale, '07.....	Bristol.
White, Benjamin Walker.....	L. I. Hosp. Coll., '86....	Bridgeport.
White, Robert Creighton.....	Univ. Vt., '89.....	Willimantic.
Whittemore, Edward Reed, A.B., Yale, '98....	P. & S., N. Y., '02.....	New Haven.
Whittemore, Frank Hamilton.....	Bellevue, '74.....	New Haven.
Wiedman, Otto George.....	Univ. Pa., '05.....	Hartford.
Wight, George DeWitt.....	Bellevue, '87.....	Bethel.
Willard, Frederick Buell, A.B., Univ. Vt., '97..	Univ. Vt., '00.....	Hartford.
Williams, Charles Mallory.....	P. & S., N. Y., '98.....	Stonington.
Wilmot, Louis Howard.....	Univ. N. Y., '91.....	Ansonia.
Wilson, Frank E.	Univ. Vt., '11.....	Montville.
Wilson, Frederick Morse, A.B., Colby, '71....	Harvard, '75.....	Bridgeport.
Wilson, James Cornelius.....	Univ. Vt., '04.....	Hartford.
Wilson, Leslie A.	Yale, '10.....	Meriden.
Wilson, William Patrick.....	P. & S., Balt., '90.....	Wallingford.
Winne, William Nelson.....	N. Y. Univ., '97.....	New Haven.
Winship, Ernest Oliver.....	Univ. Vt., '00.....	New London.

Witter, Orin Russell.....	P. & S., N. Y., '01.....	Hartford.
Wolff, Arthur Jacob.....	Tex. Med. Coll., '76, Bellevue, '83, Hartford.	
Woodford, Chester N.	Univ. Louisville, '08.....	Naugatuck.
Woodward, Harold B., B.A., Wesleyan,	Johns Hopkins, '02.....	Terryville.
Wooster, Charles Morris.....	Univ. N. Y., '79.....	Tariffville.
Wright, Frank Walden.....	Bellevue, '80.....	New Haven.
Wright, George Herman.....	P. & S., N. Y., '94.....	New Milford.
Wright, John Winthrop, A.B., Amherst, '77...	Univ. N. Y., '80.....	Bridgeport.
Wright, Theodore Goodelle.....	Univ. N. Y., '65.....	New Britain.
Wurtenberg, William Charles, Ph.B., Yale, '89.	Yale, '93.....	New Haven.
Yergason, Robert M.	P. & S., Balt., '09.....	Hartford.
Young, Charles Bellamy.....	P. & S., N. Y., '94.....	Middletown.
Zink, Charles Edwin, A.B., Balt. Univ.....	Balt. Univ., '00.....	Durham.
Zwich, Frank.....	Univ. Vt., '13.....	New Britain.

